AMERICAN MINING CONGRESS

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MONTHLY BULLETIN

SEPTEMBER, 1910

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American Mining Congress

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STANDING COMMITTEES FOR THE YEAR 1910

At each annual session of the American Mining Congress the principal part of its work for the ensuing year is outlined by resolutions adopted by vote of the delegates. The performance of this work calls for the appointment of a number of standing committees, the members of which are all selected with the idea of securing those best qualified to serve.

These committees prosecute their work between sessions and render reports of their transactions or conclusions at the first ensuing annual session. As a means of facilitating their work the Monthly Bulletin is designed to serve as a medium for the presentation of ideas from the membership generally upon topics in which particular interest is felt. The columns of the Bulletin are open to the committees and the membership for the discussion of any subject relating to mining, and all communications from members should be sent to the Secretary of the Mining Congress, who will direct same to the proper committee in case they are not intended for publication.

Below are the standing committees for the year 1910:

GENERAL REVISION OF MINERAL LAND LAWS.

E. B. KIRBY, St. Louis, Mo., Chairman.
WILL L. CLARK, Jerome, Ariz. F. G. TYRRELL, Los Angeles, Cal.
W. H. DICKSON, Salt Lake, Utah. M. BAUMGARTNER, Spokane, Wash.

SMELTER RATES.

HARRY L. DAY, Wallace, Idaho, Chairman.
S. E. BRETHERTON, San Francisco, Cal. B. N. LEHMAN, Salt Lake, Utah.
STUART CROASDALE, Denver, Colo.
JAMES H. FOX, Seattle, Wash.

FEDERAL LEGISLATION.

JOHN HAYS HAMMOND, New York, N. Y., Chairman.
J. H. RICHARDS, Boise, Idaho. E. L. DE LESTRY, St. Paul, Minn.
D. W. BRUNTON, Denver, Colo.

UNIFORM MINING LAWS.

W. R. INGALLS, New York, N. Y., Chairman.
DR. JAMES DOUGLAS, New York, N. Y. J. R. FINLAY, Goldfield, Nev.
J. P. CHANNING, New York, N. Y. J. H. HAMMOND, New York, N. Y.

MINING FRAUD LEGISLATION.

THOS. E. KEPNER, Reno, Nev., Chair man.
M. N. GRANT. Laramie, Wyo. CLARK R. MAHAN, Los Angeles, Cal.
THERON STEVENS, Goldfield, Nev.

ALASKAN MINING LAWS.

HENRY R. HARRIMAN, Seattle, Wash., Chairman.
M. D. LEEHEY, Seattle, Wash. J. L. STEELE, Seattle, Wash.

COAL TAX INSURANCE FUND.

JOHN H. JONES, Pittsburg, Pa., Chairman.
DAVID ROSS, Springfield, Ills. W. R. WOODFORD, Pittsburg, Pa.
J. W. DAWSON, Charleston, W. Va. THOS. L. LEWIS, Indianapolis, Ind.

STANDARIZATION OF ELECTRICAL EQUIPMENT.

In Coal Mines—

SAMUEL A. TAYLOR, Pittsburg, Pa., Chairman.
J. R. BENT, Oglesby, Ills. G. A. SCHREIER, Divernon, Ills.
HARRY M. WARREN, Scranton, Pa. GEO. T. WATSON, Fairmont, W. Va.
GEO. R. WOOD, Pittsburg, Pa. W. A. THOMAS, Pittsburg, Pa.

In Metal Mines—

GEN. IRVING HALE, Denver, Colo., Chairman.
HERBERT S. SANDS, Denver, Colo. CHAS. A. CHASE, Denver, Colo.

MEMBERSHIP.

THE SECRETARY, Chairman.

Eastern Committee—

SAM'L A. TAYLOR, Pittsburg, Pa. JOHN McFAYDEN, Indianapolis, Ind.
E. T. BENT, Chicago, Ill.

Western Committee—

D. W. BRUNTON, Denver, Colo. DR. CHAS. N. GOULD, Norman, Okla.
FRED'K. POWELL, Portland, Ore. JOHN DERN, Salt Lake, Utah.
W. J. COX, Ouray, Colo.

FINANCE.

E. R. BUCKLEY, Rolla, Mo., Chairman.
SIDNEY NORMAN, Los Angeles, Cal. GEO. WINGFIELD, Reno, Nev.
E. H. BENJAMIN, Oakland, Calif.

TRADE RELATIONS BETWEEN UNITED STATES AND SILVER-USING COUNTRIES.

J. FRANK WATSON, Portland, Ore., Chairman.
HENRY M. WARREN, Scranton, Pa. T. J. VEST, Galena, Kans.
CHARLES SMITH, Baltimore, Md. D. M. RIORDAN, New York, N. Y.

PROGRAM.

J. F. CALLBREATH, Denver, Colo., Chairman.
E. A. MONTGOMERY, Los Angeles, Cal. DR. W. B. PHILLIPS, Austin, Tex

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PROCEEDINGS WANTED

This office has made repeated efforts to secure copies of the Annual Proceedings of the first five sessions of the American Mining Congress, but without success. These reports cover the sessions in Denver in 1897, Salt Lake City in 1898, Milwaukee in 1900, Boise, Idaho, in 1901, and Butte in 1902.

Members who have copies of any of these reports, or who can advise where they may possibly be obtained, will confer a great favor by communicating with this office.

ADDRESSES WANTED

Mail directed to the following members has been returned unclaimed and we would be glad to receive information as to their present respective addresses. Other members will confer a favor by notifying us, in case the information is at hand.

We wish to acknowledge the courtesy of several members who have kindly given us information concerning members whose latest addresses we did not have.

NAME.	LAST ADDRESS GIVEN.
Alsdorf, F. C.	Sodaville, Nev.
Beck, W. A.	223 Mohawk Blk., Spokane, Wash.
Blockberger, F. R.	Portland, Ore.
Bedell, S. A.	Fenner, Cal.
Boyrie, H. E.	428 N. Y. Blk., Seattle, Wash.
Cardwell, B. A.	354 Arcade Annex, Seattle, Wash.
Davis, Jack	Goldfield, Nev.
Dahl, Henry P.	Cripple Creek, Colo.
Earnest, F. G.	607 Jameson Blk., Spokane, Wash.
Fox, James H.	Empire Bldg., Seattle, Wash.
Fredericks, L. G.	Buffalo, Ark.
Hull, C. W.	Bisbee, Ariz.
Ish, Marvin E.	Box 58, Goldfield, Nev.
Kennedy, Jno. F.	12-13 P. I. Bldg., Seattle, Wash.
Kennedy, S. D.	Reno, Nev.
Knowles, W. H.	55 Temple Blk., Los Angeles, Cal.
Mann, Fred A.	Joplin, Mo.
McCaffery, Richard S.	316 Herald Bldg., Salt Lake, Utah.
McDonald, J. R.	Rhyolite, Nev.
Miller, W. A.	17 Bank Blk., Denver, Colo.
Mullen, R. G.	Orogrande, N. M.
Newsander, Sam	607 Jamison Blk., Spokane, Wash.
Phillips, S. B.	Sandpoint, Idaho.
Remington, W. H.	228 Epler Blk., Seattle, Wash.
Roberts, Wm.	Shultz, via Tucson, Ariz.
Roscorla, N. B.	Sco, Ont., Canada.
Samuel, R. L.	Cananea, Sonora, Mex.
Schrock, J. B.	611 Fernwell Bldg., Spokane, Wash.
Thomas, Timothy	Baxter Springs, Kans.
Tracy, T. H.	Hotel Alexandria, Los Angeles, Cal.
Woodson, Frank A.	Globe, Ariz.
Worthen, B. L.	Shirley Hotel, Denver, Colo.

LOS ANGELES CONVENTION

We are yet unable to give in detail the program for the coming session of the Mining Congress in Los Angeles, which opens at 10:00 a. m. on Monday, Sept. 26, 1910.

The morning and afternoon sessions of the opening day will be devoted largely to the customary welcoming addresses and responses. Governor Gillett of California, Mayor Alexander of Los Angeles, and President E. A. Montgomery of the Sierra Madre Club, will welcome the delegates, and responses will be made by individuals from the states represented.

Monday evening will be devoted to the Annual Address of President Buckley, and an address by Hon. Gifford Pinchot on the subject of Conservation.

On Tuesday will occur discussions on questions of particular interest to the oil producers. In the evening a reception will be tendered the visitors by the Los Angeles Chamber of Commerce.

Wednesday and Thursday will be given over very largely to a discussion of the public lands and conservation questions, which subjects will be discussed by many men of national prominence. This will be an open discussion and all delegates desiring to speak will be given an opportunity to do so. Senator Reed Smoot of Utah has consented to make an address on this subject, and it is also expected that ex-Secretary James R. Garfield and ex-Governor Pardee will speak on these questions.

Dr. Joseph A. Holmes, Director of the Bureau of Mines, Washington, D. C., will deliver an address on the work outlined for that institution.

Edward W. Parker of the Geological Survey will speak on the problems of coal mining.

Friday will be Governors' Day, when a conference of Western Governors and their personal representatives will be held. This conference will take up the same work as was taken up at the recent meeting of Governors in Salt Lake City, and will be im-

portant in that it will probably determine the policy which will be pursued by the Mining Congress with reference to these questions.

Capt. Jack Crawford, Poet-scout, Broncho-philosopher and Miner, will attend and entertain the delegates with some of his selections of breezy Western verse. Capt. Jack "made a hit" with the delegates to the Denver Convention in 1906, and his lecture at Los Angeles will be eagerly welcomed. His "To Sink or not to Sink," (a parody on Hamlet's Soliloquy) is one of the classics of mining literature.

The reports of the special committees will be given during the week, and a time will be set for the consideration of each.

The final session will be held on Saturday morning.

The Sierra Madre Club has planned some superior features of entertainment for the time not occupied by the regular business of the Convention.

In point of importance of matters to be taken up, this session of the Mining Congress will be of great interest to mining men, and we again urge all to attend who can possibly find opportunity to do so.

TWO VERY IMPORTANT QUESTIONS

We call special attention to the report of the Committee on Prevention of Mine Accidents and Uniform Mining Laws, published elsewhere in this issue of the *Bulletin*.

This committee has arduously considered this question for several years. Its report will be considered at the Los Angeles meeting, and we earnestly suggest that the matter be given careful thought in the interim. This will make possible mature discussion, which is always more profitable and valuable than the random discussion which ordinarily follows the reading of a committee report in a convention.

We also direct attention to the abstracts of the administration conservation bills printed in this issue, since they will likewise be among the most prominent subjects for discussion. Whether the Mining Congress will favor the passage of such radical legislation, or work for its amendment or defeat altogether, must be decided at the Los Angeles meeting.

We urge that you preserve this copy of the *Bulletin* for future reference, or bring it with you to the convention, if you are able to attend.

RESOLUTIONS SHOULD BE PREPARED IN ADVANCE

The adoption of resolutions is perhaps the most important work of the annual assembly, since they determine the attitude of mining interests toward political and mining questions, and are a commitment of the American Mining Congress to a definite policy. Great care, therefore, should be exercised in their discussion and adoption. This demands that the delegates, as well as the Resolutions Committee, should have ample time for their consideration before acting upon them by vote.

Delegates contemplating introduction of resolutions before the convention should have them all prepared on the first day of the session, three identical copies if possible, and immediately hand them to the Secretary, who will post them for information of the convention.

Resolutions may be introduced by any delegate, and all have the right to appear before the Resolutions Committee, or speak before the convention, in support of their resolutions.

NOTICE OF ANNUAL MEETING OF MEMBERS

Below we reprint notice of annual meeting of members of the American Mining Congress, which is contained in the Official Call, recently mailed out to all members:

A meeting of the members of the American Mining Congress is hereby called to meet at Los Angeles, California, on Thursday, September 29, 1910, at 8 o'clock, p. m., for the purpose of electing three directors to hold office for three years each to succeed E. R. Buckley, John Dern and George W. E. Dorsey, whose terms of office as directors expire, and for the transaction of such other business as may be properly brought before said meeting.

Order of the Executive Committee.

E. R. BUCKLEY, President.

J. F. CALLBREATH, JR., Secretary.

Denver, Colo., July 20, 1910.

DR. HOLMES APPOINTED DIRECTOR OF MINING BUREAU

Mining men throughout the country are uniformly pleased with the appointment of Dr. Joseph A. Holmes as Director of the Bureau of Mines, which was announced by President Taft a few days since.

Dr. Holmes is in every way qualified for this important work, and under his direction its maximum usefulness is assured. Both the Doctor and the Bureau deserve to be congratulated and President Taft in this respect has earned the gratitude of the mine owner, engineer and worker.

SPECIAL CAR FOR COLORADO DELEGATES TO MINING CONGRESS

A special car has been secured, to run via the Santa Fe railroad, for the accommodation of members and delegates of the Mining Congress, from Colorado and vicinity,

The car will leave Denver on the California Limited train Thursday afternoon, Sept. 22nd, at 3:30 o'clock. At La Junta, Colo., it will connect with the Chicago delegation, who are going through to Los Angeles in special cars over the Santa Fe road.

The schedule provides for a side trip to the Grand Canon of the Colorado River, in Arizona, after which the party will proceed direct to Los Angeles, arriving there on Sunday, Sept. 24, at 5:00 p. m.

Delegates from Colorado and points east and south, who intend to go to Los Angeles for the convention, are invited to join this party.

Full information may be secured by addressing Walter A. Koch, assistant secretary, 1510 Court Place, Denver, Colo.

COLORADO CHAPTER

Minutes of General Meeting, August 27, 1910.

D. W. Brunton in the Chair.

Mr. Brunton, after calling the meeting to order, vacated the chair in favor of Judge E. A. Colburn.

This being the first meeting of the Colorado Chapter, there were no minutes to be read.

The call for the meeting was read by the Secretary and the notes regarding the Administration Conservation measures were given by him.

Mr. Brunton moved and Mr. Dean seconded the following resolutions:

Whereas, There exists a widespread feeling that the prospector in the Forest Reserves is greatly hampered in his work; and,

Whereas, This fear, we are informed, results in keeping skilled prospectors outside the Reserves, which contain within them a large portion of mineral territory of the State;

Be it Resolved, That the Colorado Chapter of the Mining Congress take immediate steps to ascertain to what extent and in what manner there is such prohibition and to call proper attention to same with view to remediation;

Further Resolved, That a committee of five be appointed by the President of the Chapter with power to consider all complaints by prospectors and miners in any Reserve whatsoever, and that such committee be empowered to take any steps and to make any rules not contrary to the by-laws of the Chapter for the purpose of carrying into effect the aims and intent of this Resolution.

A discussion followed in which Messrs. Brunton, Argall, Dean, Callbreath and Donaldson participated. The Resolutions were adopted.

Mr. A. M. Donaldson moved and Mr. Dean seconded a resolution as follows: That a committee of three be appointed by the President of the Chapter to consider the question of timber conservation as applied to the mining districts. The question was

debated by Messrs. Argall, Donaldson, Callbreath, Dean and Judge Colburn. The resolution was adopted.

A resolution presented on behalf of the Executive Committee in reference to mining claims situated above timber line was ordered to be referred to a later meeting.

A general discussion of the administration conservation measures ensued and in view of a general lack of information as to the details of these measures, it was ordered on motion of Judge Dean, seconded by A. M. Donaldson, to have full abstracts printed of the various conservation bills before Congress for the information of members.

The meeting adjourned until Friday, September 2, 1910.

A. W. WARWICK, *Secretary.*

Minutes of Meeting, September 2, 1910.

Judge E. A. Colburn in the Chair.

Mr. James F. Callbreath, Jr., explained at length the work of the American Mining Congress in the formation of the federal Bureau of Mines. He also gave a very interesting outline as to the work accomplished by the meeting of Western Governors in Salt Lake, at which meeting he was the representative of Governor Shafroth. The declaration of principles by the Governors was read and these resolutions were the subject of general commendation.

The conservation bills now before Congress were debated but no action was taken.

The business of the Colorado Chapter was then taken up and the Secretary explained the need for the formation of a number of committees. Mr. Callbreath moved and Col. Brownlee seconded that the Secretary be instructed to arrange for the committees and to report to the Board of Directors for its approval.

It was also moved that the Secretary should arrange for committees of three in each mining section of the state in order that local branches of the Chapter might be formed.

It was also moved and seconded that the Secretary be chairman of the Committee on Organization and Membership. The duty of the Commmittee on Organization is to take up with the local committees the details of organizing sections in the various parts of the state.

The following committees were ordered appointed:

Taxation
Legislation
Industrial Relations
Ore Treatment
Transportation
Finance
Publicity

On motion of Mr. Callbreath, seconded by Col. Brownlee, it was ordered that the third Friday in every month be set aside for a regular monthly meeting of the members of the Chapter to be held at 8:00 p. m., 1510 Court Place, Denver.

Minutes of Meeting of Executive Committee.

September 2, 1910.

Present—James F. Callbreath, Jr., and Max Boehmer.

The resignation of Major A. V. Bohn as a member of the Board of Directors was read, and inasmuch as Mr. Irving Howbert has signified his willingness to serve, on motion of Mr. James F. Callbreath, Jr., and seconded by Mr. Max Boehmer, Mr. Irving Howbert of Colorado Springs was elected to fill the vacancy on the Board and the Secretary instructed to so inform Mr. Howbert.

The Secretary was instructed to correspond with various gentlemen in order that the place on the Board vacated by General Bulkeley Wells be suitably filled.

A. W. WARWICK, *Secretary.*

THE CONSERVATION BILLS

The conservation measures prepared by the Administration and introduced by Senator Nelson of Minnesota last January more clearly define the actual conservation policy of the government than speeches to popular audiences. It was, therefore, thought desirable to obtain copies of the bills prepared by the Administration and abstract them for the information of the members of the American Mining Congress.

The bills abstracted cover the coal, water, phosphate, oil, asphaltum and timber measures.

These bills appear so radical and may so entirely change the spirit of the old laws that mining men should scrutinize the bills very carefully in order to see their effect upon the mining industry.

Candid, free and open discussion of these measures can result in no harm. There is much to be said for, as well as against, the measures of which abstracts are given. Inasmuch as these bills practically apply only to the West, although, of course, not so stated in their texts, it behooves Western men to pay special attention to these measures in order that no permanent injury be sustained by the Western mining states.

Senate Bill 5486.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior be, and he is hereby, authorized and directed to cause to be examined any public lands, national forests, national monuments, national parks, game reserves or other reservations valuable, or which may become valuable, for the development of water powers, or power for hydro-electric use or transmission, and classify and reserve by legal subdivision, or by metes and bounds, from other use or disposition, all lands he may deem of more value for power development than for other uses. Whenever areas so reserved include lands covered by valid existing locations, selections, or entries, the locators, selectors, entrymen, or their assigns, upon relinquishment of the lands so reserved to the United States, shall be paid the value of the lands and improvements so relinquished at the time of such relinquishment as determined by the Secretary of the Interior; PROVIDED, That in the event any such locator, selector, entryman, or assignee having a vested right in such reserved lands fails or refuses upon request of the Secretary of the Interior to relinquish the lands or improvements

claimed by him, such lands, or improvements, or both, may be acquired by said Secretary under condemnation proceedings."

Section 2 provides that the applicant must furnish plans, specifications, etc., and calls for a deposit of $1,000. All rights of way over private land, secured by the applicant, shall be conveyed to the United States. The life of the leases granted is 40 years. The lessee will be allowed five years to develop or transmit at least twenty-five per cent of the power available.

Section 3. Each lessee shall pay for the leasehold privileges "such rates per electric horsepower developed ———— as may be specified in the lease, which rate may be graduated according to the amount of power developed and also may be increased every ten year period during the term of the lease."

Section 4 provides for the maximum rates for power which may be charged to the public. Also provides for the forfeiture of lease.

Section 5 calls for detail reports to be made to the government "in such manner and at such times as the Secretary of the Interior may require."

Section 6 calls for appraisement of the property within five years of the expiration of lease and a new lease for a period of forty years shall be offered to the original lessee which, if declined, shall be sold at public auction at an upset price. The original lessee shall thereupon be entitled to be compensated to the extent of the sum received for the improvements only. Same section provides that no transfer, sale or assignment of the lease shall be made without the approval of the Secretary of the Interior.

Section 7 provides for railways and other rights-of-way.

"Section 8. That the proceeds derived from entry fees and leases under the provisions of this Act shall be distributed as follows, to wit: One-third shall be paid to the State or Territory, to be expended under the direction of the legislature thereof, for roads and schools in the counties where the leaseholds are situated, and the residue shall be covered into general fund of the Treasury of the United States."

"Section 9. That jurisdiction to determine the issues and matters which are by this Act committed to the courts is hereby conferred upon the United States circuit and district courts for the districts in which the lands or leaseholds are situated."

"Section 10. That the Secretary of the Interior is hereby authorized to perform or cause to be performed any and all acts and to make such rules and regulations as he may deem necessary and proper for carrying the provisions of this Act into full force and effect."

Senate Bill 5487.

Introduced by Senator Nelson January 18, 1910, and referred to the Committee on Public Lands.

COAL RESERVATION BILL.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all lands within the United States or the Territory of Alaska to which patents have not

been earned or to which a vested right has not been acquired, and which contain deposits of coal, or of lignite or associated minerals which for the purposes of this Act shall be called coal, and the coal therein, are hereby reserved from all forms of entry, appropriation and disposal except under the provisions of this Act."

Section 2 provides that any citizen of the United States or any association of citizens, corporate or otherwise, may on the payment of an application fee of Ten Dollars receive an exclusive right to prospect for coal on land owned by the United States. It is provided that such licensee shall not prospect on land within twenty-five miles containing a coal deposit in which he may be interested as lessee, assignee, owner "or otherwise."

"Section 3. The Secretary of the Interior is authorized under such rules and regulations as he may prescribe on payment of a rental of not less than ten cents per acre to grant to any qualified applicant a prospecting permit which shall give exclusive right for twelve months in the United States or twenty-four months in Alaska to prospect for coal on a specified area in compact form not exceeding five thousand one hundred and twenty acres of public domain and to lease not more than two thousand five hundred and sixty acres under the provisions of the bill."

Section 4 provides that any qualified applicant may develop and extract for domestic use and dispose of for local consumption coal belonging to the United States in areas not exceeding forty acres nor less than ten acre subdivisions for a period not exceeding five years "at such rates of payment, on such terms, and under such conditions as will safeguard the public interest."

Section 5 provides for the execution of leases in blocks not exceeding two thousand five hundred and sixty acres. It provides also for covenants relative to mining methods and waste, to period of preliminary development, and quantity of production as may be prescribed by the Secretary of the Interior. The first period of lease shall not exceed thirty years. The lease may be extended in periods of ten years under such conditions as the Secretary may prescribe. Maximum royalty is fixed at fifteen cents per ton of run-of-mine coal and there shall also be paid yearly in advance a rental of ten cents an acre for the first year, twenty-five cents for the second year, fifty cents for the third, seventy-five cents per acre for the fourth year and one dollar for the fifth year and each succeeding year thereafter; but the rental for any one year shall be a credit on the royalty for that year.

Section 6. All applications for permits, licenses, leases shall be presented to such official as the Secretary of the Interior may designate.

Section 7. No permit, license or lease shall be issued until the applicant has entered into a bond in such amount as the Secretary of the Interior may prescribe for the payment of all moneys or damages and for the faithful performance of all acts, duties and obligations.

Section 8. No license or lease shall be assigned, mortgaged or sublet, except with the permission or approval of the Secretary of the Interior and under such conditions as he may prescribe.

"Section 9. That a license or lease may, in the discretion of the Secretary of the Interior, be terminated upon the written request of the licensee or lessee to the Secretary, and after opportunity has been afforded to said Secretary to examine into the condition of the property."

Section 10. In case a license or lease is terminated, the right is reserved to the retiring licensee or lessee to dispose in the open market of such of the buildings, machinery or other improvments as, in the opinion of the Secretary, can be removed without injury to the leasehold. But all rights are forfeited to so much of these improvements as the Secretary may deem necessary to retain as a part of the premises. It is provided also that if the Secretary shall relicense or relet the remainder of the coal covered by the former licensee, he shall provide that reasonable compensation shall be paid by the new licensee or lessee to the former lessee or his representatives for remaining structures, fixtures or improvements.

Section 11. Licensees have the right to use so much of the surface as shall be determined from time to time by the Secretary of the Interior. Licensees, however, shall compensate all settlers, entrymen and owners of any lands embracing their permits.

Section 12. The Secretary of the Interior may withdraw from entry, occupation or settlement any unappropriated public lands the surface of which he may deem necessary for use in connection with the production, handling or transporting of coal under this Act.

Section 13 provides for forfeiture of license on failure to comply with the terms.

Section 14. Maximum prices or rates shall be fixed beyond which the lessee or licensee shall not charge the public for coal extracted under the lease or license.

"Section 15. That the laws of the State or Territory in which the land is situated for control or inspections and the operations of mining and producing coal shall apply to operations under the licenses and leases herein authorized, except where such laws are in conflict with this Act."

Section 16. Lessees or licensees shall furnish the Secretary of the Interior with written statements of any and all acts performed or of any and all moneys received by them under such lease or license in such manner and at such times as the Secretary may require.

Section 17. To mine, produce or remove coal belonging to the United States without authority derived from the Secretary of the Interior shall constitute a trespass, punishable upon conviction by a fine not exceeding one thousand dollars or imprisonment for not exceeding one year, or both.

Section 18 gives the Secretary of the Interior authority to make such rules and regulations as he may deem necessary or proper for carrying out the provisions of this Act.

Section 19 provides that all unappropriated and unreserved public lands may be settled upon under any of the non-mineral public land laws, notwithstanding the existence of coal, and patents may be issued for such land. But patents for all such lands shall contain a reservation to the United States and its lessees of all coal therein and the right to use so much of the surface as may be necessary to the mining, removal and sale of such coal.

Section 20. Jurisdiction to determine the issues and matters which are committed to the courts is conferred upon the United States circuit and district courts.

Section 21. All existing laws relative to the sale or disposal of coal deposits and all other laws in conflict herewith are hereby repealed.

Senate Bill 5488.

Introduced by Senator Nelson January 18, 1910, and referred to the Committee on Public Lands.

Authorizes the disposal of phosphate, oil, asphaltum or natural gas.

There are in this Bill twenty-one sections and these are, for all practical purposes, identical with the terms of Senate Bill 5487.

Senate Bill 5489.

Introduced by Senator Nelson January 18, 1910, and referred to the Committee on Public Lands.

TIMBER RESERVE.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all legal subdivisions of surveyed, vacant and unreserved public lands of the United States, west of the summit of the Cascade Range and Sierra Coast Range of mountains, bearing milling timber which averages eight thousand feet per acre, and all such lands east of the summit of said mountains bearing such timber which averages five thousand feet per acre, and the timber thereon, shall be disposed of only in the manner prescribed by this Act".

"Section 2. That the timber on all lands mentioned in the foregoing sections shall be sold by the Secretary of the Interior to citizens of the United States or to associations composed of such citizens, at public sale at not less than its appraised value, in such manner and amounts and under and subject to such regulations, terms, and conditions as the Secretary of the Interior may prescribe, but a purchase of timber under this Act shall not be construed or operate to give the purchaser thereof any right, title or interest in or to the land upon which such timber is standing, except the right to such use and occupancy thereof as may be necessary to the cutting and removal, or to the sale or manufacture of the timber into lumber, and all timber so sold shall revert to the United States if it is not cut and removed within twenty years from the date of its sale, except in cases where the timber is purchased by entrymen or locators to whom patents issue under this Act for the lands on which such timber is located."

Section 3. The acquisition of land under mineral or coal land laws or homestead laws gives no right, title or interest to the lumber thereon.

Section 4. Any person who has made a location or entry has a preference right to purchase the timber at the top price bid therefor at a public sale at which such timber is offered. He shall pay the purchase price of such timber in such installments and at such times as the Secretary of the Interior may direct, but no locator or entryman shall sell or cut or remove the same or any part thereof until the whole of the

purchase price of all timber has been fully paid. No patent shall issue to any locator or entryman for any lands covered by timber purchased by him until after he has fully paid for such timber.

Section 5. Proceeds from the sale of timber shall, after paying the expenses of appraisal and sale, be distributed as follows: "One-fourth shall be paid to the State or Territory, to be expended under the direction of the legislature thereof for roads and schools in the counties where the timber sold was located at the time of the sale. The residue of said proceeds from the sales of timber in the States or Territories subject to the provisions of an Act entitled 'An Act appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands.'"

Section 6. As soon as any timber sold under this Act has been removed from the land, such land shall become subject to entry or disposal under the general provisions of the public land laws of the United States.

"Section 7. That the Act entitled 'An Act authorizing the citizens of Colorado, Nevada, and the Territories to fell and remove timber on the public domain for mining and domestic purposes,' approved June third, eighteen hundred and seventy-eight, and the Act entitled 'An Act for the sale of timber lands in the States of California, Oregon, Nevada, and in Washington Territory,' approved June third, eighteen hundred and seventy-eight, excepting sections four, five, and six, thereof, and all Acts and parts of Acts amending or extending sections one, two and three of said Act, and all other Acts or parts of Acts inconsistent herewith, be, and the same are hereby, repealed; Provided, That all valid subsisting claims heretofore initiated under sections one, two and three of said Act of June third, eighteen hundred and seventy-eight, or amendments thereof, may be perfected upon compliance with law and regulations issued thereunder."

REPORT OF COMMITTEE ON UNIFORM MINING LAWS FOR PREVENTION OF MINE ACCIDENTS

To the American Mining Congress, American Institute of Mining Engineers, Mining and Metallurgical Society of America.

The committee that makes this report was appointed at the meeting of the American Mining Congress, at Denver, Colo., in November, 1906. The appointment had in view the drafting of a law for the regulation of quarrying and metalliferous mining under the police laws of the States, with the hope that the uniform adoption of such a law could tend to reduce the number of accidents in mining.

Since its appointment, the committee has had under serious and continuous consideration the matter with which it was charged. At the meetings of the American Mining Congress in 1907, 1908 and 1909, it reported progress. At the meeting in 1909 it was authorized to present its report not only to the American Mining Congress, but also to the American Institute of Mining Engineers and the Mining and Metallurgical Society of America, and to present its report in printed form during the interim between meetings of the American Mining Congress.

The committee collected from the officials of the States of the Union copies of their mining laws. With the assistance of the Engineering and Mining Journal, copies of the laws of Great Britain, the Transvaal, New South Wales, Victoria, Queensland, Western Australia, Tasmania, New Zealand and certain European countries were also obtained. These laws were subjected to careful study. The first publication of the committee was a summary of the more important metalliferous mining laws of this country. Upon the basis of the existing laws of the States of the Union, Great Britain and the English speaking colonies, a tentative draft was prepared and printed in limited number in 1909, for convenience in securing the advice and criticism of a considerable number of persons engaged in the mining industry. In this way valuable suggestions were received.

At the request of the chairman of this committee, Mr. Frederick L. Hoffman, statistician of the Prudential Insurance Company, of Newark, N. J., summarized and reviewed the available statistics of fatalities in metalliferous mining in the United States. Mr. Hoffman's report was published in the Engineering and Mining Journal of March 5, 1910, and accompanies this report as appendix B. No such summary of fatal accidents in the United States has heretofore been compiled, so far as we are aware.

The deficiencies of his report are frankly recognized by Mr. Hoffman. He has made the most out of the data available, but unfortunately, to the discredit of our mining industry, the available data are scanty. For only six States has it been possible to secure statistics extending over a long series of years. The other States do not report them. Consequently, the figure reached by Mr. Hoffman must be regarded as indicative rather than as absolute.

The probability is, however, that the actual ratio of fatal accidents in metal mining is larger than the figures reported by Mr. Hoffman, because his figure is based chiefly upon the States which have provided the best mining laws and the best systems of mine inspection. The good of these things is clearly shown by the statistics. Thus, in Colorado and Montana,

which among the Western States are conceded to have the best laws, the general tendency of the fatality ratio has been downward. We are led to believe that if those States and Territories like California, Nevada, Arizona, New Mexico and Utah, which have not had either adequate mining laws or systems of mine inspection, could be summarized in the same way, the general ratio of lives lost per 1,000 men employed would be increased.

Mr. Hoffman clearly established something that has been strongly suspected, namely, that the loss of life in metal mining in the United States is fully as great as in coal mining. Mr. Hoffman has arrived at the average of 3.09 per 1,000 in metal mining, as compared with 3.13 in coal mining. Bearing in mind the condition that we have mentioned above and the fact that the statistics for coal mining are far more complete than for metal mining, we surmise that the loss of life in metal mining in the United States is actually larger, proportionately, than in coal mining. This emphasizes the importance of a movement to remedy bad conditions.

DRAFT FOR A LAW.

The chief work of the committee has been in the prepartion of a draft for a law. In this work it has invited and received the assistance of several members of the bar, especially Dr. Rossiter W. Raymond, of New York; E. E. Ellinwood, Esq., of Bisbee, Arizona, and Archibald Douglas, Esq., of New York. To the valuable co-operation of Mr. Douglas, who devoted a great deal of time to the matter, particular acknowledgment is due. Mr. Douglas prepared the draft for a law finally adopted by the committee, which accompanies this report as appendix A.

In the preparation of this draft, the committee has had in mind the preparation of a law that will be effective, and not merely a code of rules and regulations of which the enforcement will be largely optional. The committee has aimed to fix responsibility upon operator, superintendent, foreman and miner respectively, and the failure on their part to comply with the terms of the law is to be punishable by suitable penalties. The enforcement of the law is charged primarily upon the inspector of mines, who is to be to all intents and purposes a policeman.

The conditions of mining in various parts of the United States are widely different. The basic laws of the several States also differ to more or less extent. It has been beyond the ability of this committee to draft a law, which it can say with assurance will be equitable under all conditions obtaining in mining in the United States; or will be in conformity with the basic laws of all the States. Consequently, the committee presents its present draft as a preliminary and invites criticism for its assistance in preparing a final report.

Although the duties of this committee were limited to quarrying and metalliferous mining, the committee suggests that its draft for a law may advantageously be made to apply to all kinds of mining in those States which have no special colliery law. Coal mining and metal mining do not differ in principle to so great an extent as is popularly supposed. The fundamental rules for safety in metal mining apply also to coal mining, but the latter has dangers peculiar to itself which should be considered in special provisions in those States where coal mining is extensively carried on.

MINE INSPECTION.

In the opinion of the committee, the essential steps toward reducing the loss of life in metalliferous mining are (1) a comprehensive and effective law; and (2) an adequate system of mine inspection. The latter is the keystone of progress. Much can be accomplished by an adequate system of mine inspection, even if a comprehensive law be lacking, but no matter how thorough and effective in theory a law may be, it will fail in its purpose unless provision be made for its sincere, impartial and positive enforcement by an adequate system of competent mine inspection.

To secure such a system of mine inspection, the States must appropriate a good deal more money than any has yet done. Each State must

have a mine inspector, and he must be provided with a sufficient number of deputies to enable frequent inspections of all operating mines to be made. One inspection of a mine in a year is not enough. The inspector and deputies must, moreover, be provided with proper funds for clerical work, traveling expenses, etc. So far as we are aware, the State of Colorado makes the largest appropriation for inspection of metal mines, its appropriation being $25,000 per year. Other important mining States appropriate only $10,000. In the opinion of the committee, such appropriations are utterly inadequate. For States possessing a mining industry of the importance of that in Colorado, Utah, Montana, Nevada, California, and, in fact, all of the States and Territories west of the Rocky Mountains, an annual appropriation of $50,000 to $100,000 per State is necessary. Such expenditures are thoroughly justified by the importance of the end to be gained. At the present time the number of persons killed annually by accident in the metalliferous mines of the United States is probably in the neighborhood of 500, estimating upon the rate of 3.09 per thousand as determined by Mr. Hoffman. In many important foreign countries, the death rate is less than 1½ per thousand. We operate in this country at a more intense rate than in many foreign countries, and perhaps our death rate per tonnage of ore produced per man would not compare so unfavorably, and because of this more intense operation it may be impossible for us to attain the low rate of some foreign countries. It must be borne in mind that it is not only underground but also overground that accidents are more numerous in this country than in Europe. There is a spirit of recklessness in this whole land that leads people to take risks that the European population avoids. But certainly our mining practice is capable of great improvement with respect to the safety of the miners, and the magnitude of the annual loss justifies a large State expenditure for the purpose of its reduction.

Consequently, the committee emphasizes strongly that the reduction of loss of life in mining is dependent chiefly upon the money that the people of the respective States are willing to spend for the enforcement of their mining laws, and in such expenditures the committee urges great liberality.

It is essential that mine inspection be impartial—absolutely free from all political, personal or selfish interests; and, moreover, that it be competent. In its draft for a law, the committee has incorporated, after very careful consideration, qualifications for mine inspectors, which, in its opinion, will provide the essential conditions stated above.

New York, Sept. 1, 1910.

Respectfully submitted,

WALTER RENTON INGALLS, Chairman.
J. PARKE CHANNING
JAMES DOUGLAS
JAMES R. FINLAY
JOHN HAYS HAMMOND

APPENDIX A.

AN ACT

RELATING TO METALLIFEROUS MINES IN THE STATE OF AND TO PROVIDE FOR THE HEALTH AND SAFETY OF PERSONS EMPLOYED IN AND ABOUT THE SAME.

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Sec. 1. DEFINITION OF TERMS.

The terms of this Act shall apply to all quarries and metalliferous mines in the State of ———— employing more than 10 persons in any period of 24 hours.

MINE. The term "Mine," when used in this Act, is intended to include quarries and prospect openings; and to mean any and all parts of the property of a mine, prospect, quarry and mining plant on the surface or underground, which contribute directly or indirectly to the mining or handling of minerals. But the term "Mine" shall not apply to collieries.

OPERATOR. The term "Operator," when used in this Act, means the person, firm or body corporate in immediate possession of any mine and its accessories as owner or lessee thereof, and as such responsible for the condition and management thereof.

SUPERINTENDENT. The term "Superintendent," when used in this Act, means the person who shall have the immediate supervision of the mine.

MINE FOREMAN. The term "Mine Foreman," when used in this Act, is a person who is charged, at any one time, with the general direction of the underground work.

INSPECTOR AND DEPUTY. The term "Inspector," when used in this Act, signifies the State Inspector of Mines, and the terms "Deputy" and "Deputy Inspector," when used in this Act, means a State Deputy Inspector of Mines.

EXCAVATIONS OR WORKINGS. The words "Excavations" and "Workings," when used in this Act, signify any and all parts of a mine, excavated or being excavated, including shafts, tunnels, entries, galleries, open cuts and all working places, whether abandoned or in use.

Sec. 2. OFFICE OF INSPECTOR OF MINES.

The office of Inspector of Mines for the State of ———— is hereby created.

The Governor of the State, by and with the advice and consent of the Senate, shall appoint such Inspector of Mines. The Inspector of Mines shall be at least 30 years of age, a citizen of the United States, a resident of this State for at least one year previous to his appointment, and shall be practically engaged in metalliferous mining, and shall have had at least 10 years' experience in underground mining in the United States of America. The Inspector of Mines (but not the deputy inspectors) must have been for at least five years in charge of a mine, in the United States of America, employing fifty or more men underground, to be qualified for such office. He shall receive as full compensation for his services a salary of ———— Dollars ($————) per annum. He shall hold his office for a term of four years (the first term beginning January —, 19—), unless sooner removed by the Governor, or until his successor is appointed and qualified; and in case of vacancy by death, removal, resignation or otherwise, the Governor shall fill such office, for the remainder of any such term of four years, by appointment.

Sec. 3. DEPUTY INSPECTOR OF MINES.

The office of Deputy Inspector is hereby created. The Inspector of Mines is hereby authorized and directed forthwith, upon the entering of the duties of his office, to appoint ———— Deputy Inspectors, who shall each receive a salary payable at the rate of $———— per annum while holding such office. All Deputy Inspectors appointed under the provisions of this Section shall be subject at any time to removal by the Inspector. The Inspector shall also appoint hereafter such additional deputies as the Legislature may provide, who shall, when so appointed by the Legislature, be in all ways subject to the provisions of this Section. In case of vacancy in the office of any Deputy Inspector caused by death, removal or otherwise, the Inspector of Mines shall forthwith fill such vacancy. The qualifications of all Deputy Inspectors shall be the same as those required in the case of the Inspector of Mines, as set forth in Section 2 of this Act;

excepting, however, that such Deputy Inspectors shall have been for two years in charge of a mine in the United States of America, employing at least twenty-five men underground. All Deputy Inspectors shall perform duties as required by this Act, and shall be under the direct control and direction of the Inspector of Mines. In the absence or disability of the Inspector of Mines, any deputy designated by him may act with like authority as the Inspector of Mines. In case of a vacancy in the office of Inspector of Mines, the deputy longest in office present, shall act as such Inspector, until such vacancy has been filled.

Sec. 4. QUALIFICATIONS AND POWERS OF INSPECTORS.

No person shall be appointed to the office of Inspector or Deputy Inspector, nor be qualified to hold the office of Inspector or Deputy Inspector, while an employee, director or officer of any mining, milling or smelting company; or while directly or indirectly connected with any mining company or co-partnership operating in this State, either as stockholder, partner, or in any other capacity; or while engaged in private practice as a consulting engineer. The Inspector and each Deputy must devote his entire time to the duties of their respective offices; and it shall be unlawful for the Inspector, or any Deputy, to be otherwise employed by the State of ————, or to act directly or indirectly, for or on behalf of any candidate for public office, or for any political party, or receive compensation, either directly or indirectly, from any candidate for public office or from any political party in the State during the terms of such Inspector or Deputy Inspector. Failure to observe the provisions of this Section shall render the Inspector liable to immediate removal from office by the Governor without further cause shown; and such failure shall render any Deputy Inspector liable to immediate removal by the Inspector of Mines, without further cause shown; and the Governor and Inspector of Mines are hereby authorized and empowered to make removals in such cases.

Sec. 5. SALARY AND EXPENSES.

All reasonable and necessary expenses actually incurred by the Inspector and by any Deputy in the performance of their duties, for traveling expenses, clerk-hire, postage, stationery, printing and disbursements incidental and reasonable to the office of Inspector, or of Deputy Inspector, shall be paid by the State Treasurer upon the warrant of the Comptroller* issued upon proper vouchers therefor, when approved by the Inspector of Mines, but such expense, together with the salaries of the Inspector and his Deputies, shall not be incurred in excess of appropriations by the Legislature. The salaries of Inspector of Mines and of all Deputy Inspectors shall be paid as the salaries of other State officers are paid.

Sec. 6. INSPECTORS SHALL BE ALLOWED ALL LEGAL EXPENSES.

The Inspector may employ counsel to represent him, or any Deputy, or to assist in the prosecution of actions or proceedings brought under the provisions of this Act.

In addition to the expenses allowed to the Inspector, as set forth in Section 5 of this Act, he shall be allowed all necessary expenses and reasonable counsel fees actually incurred in enforcing the several provisions of this Act in the respective Courts of this State, and the same shall be paid by the State Treasurer on warrants drawn by the Comptroller* after auditing the same; all such claims and expense accounts shall be presented and passed by the Inspector, and approved by the Court before which such proceedings were instituted. In the event of any costs being finally taxed against the State in any suit in which the State, at the relation of the

———

*Each State will substitute the title of the proper official according to its own system.

Inspector is either plaintiff or defendant, the same shall be approved by the Court, and audited and paid in like manner as such legal expenses are authorized to be paid as aforesaid.

Sec. 7. OFFICE AND RECORDS OF INSPECTOR OF MINES.

The Inspector of Mines shall be provided with a properly furnished office in the State House in ———— in which he shall keep a record of all mines examined either by the Inspector or his deputies, showing the dates of such examinations, the condition in which the mines so examined were found, with particular reference to the safety, ventilation and sanitary conditions of each mine so examined, the manner and method of working, all violations of the provisions of this Act found, if any, the action taken thereon, and the result of such action, together with recommendations made in case of each mine examined by the Inspector or any deputy; and any other data or information pertaining to his office and acquired during the carrying out of this Act. For the purpose of aiding the Inspector in making up such data it shall be the duty of each deputy to transmit from time to time, or upon request from the Inspector, a complete record of all mine examinations made by such deputy, and an itemized statement of his work as such deputy in such form and covering such detail as the Inspector shall in his opinion deem necessary.

All documents, plans, books, memoranda, notes and other material pertaining to the office of the Inspector of Mines, or of any Deputy Inspector, shall be the property of the State, and shall be delivered by the said Inspector, or by such Deputy Inspectors, to their successors in office. The Inspector may at any time call for all or any papers, documents, plans, books, memoranda, notes or other material in the hands of any deputy, who shall deliver same to said Inspector upon call.

Sec. 8. REPORTS TO INSPECTOR OF MINES.

It is hereby made the duty of the operator of each and every mine within the State to forward to the Inspector at his office, not later than the 20th day of January, in each year, a detailed report in writing, on a form prescribed by the Inspector, showing the character of the mine, tonnage of ore produced during the previous year, ending December 31st, the average number of men therein employed during the year (the average number of men being computed by dividing the total number of shifts worked per man by the number of days the mine was worked), the number of days the mine was worked, the number of fatal and serious accidents during the year, and such other information relative to the workings, equipment, ventilation, sanitation, means of ingress and egress, shafts, trucking, supports, safety devices, storage of explosives, means taken to protect lives and usual safety of men in relation to any of the requirements of this Act, as the Inspector may, from time to time require. All such reports shall be filed in and become part of the records of the office of the Inspector of Mines. Blank forms for such reports shall be furnished by the State.

Provided, however, that in the case of any mine being operated for less than one year prior to December 31st in any year the operator in such event shall forward a report, in like manner, covering the period during which said mine was operated, and

Provided further, that in the event of the sale of any mine during any year prior to December 31st, that then and in that event it shall be the duty of the owner or operator so selling, leasing or turning over such mine to a succeeding operator to supply to such succeeding operator a like report, as required in this Section, covering the period of such former operations within said year; and it shall then and in that event become the duty of such succeeding operator to forward such report so turned over, together with such last operator's report, for the period of such last

operator's operations, to the Inspector of Mines as aforesaid, not later than the 20th day of January in each year.

In all cases, occurring in or about any mine, of underground fires, breakage of ropes or other gear by which men are hoisted, or lowered, overwinding while men are being hoisted, or inrush of water from old workings, whether or not personal injury or disablement results, a report thereof, signed by the operator or superintendent must immediately be sent in writing to the Inspector.

A failure, neglect or refusal to make such reports or to give such information as are provided for in this Section, upon demand made in writing by the Inspector, or by any of his Deputy Inspectors, shall constitute a misdemeanor and every such operator, or person in charge of such mine, or other person so failing, neglecting or refusing after written demand made as aforesaid shall be deemed guilty of a misdemeanor, and on conviction shall be fined for each offense not less than $50 or more than $200; and each separate failure, neglect or refusal after demand, as aforesaid, shall constitute a separate offense.

Sec. 9. DESIGNATION FOR SERVICE OF NOTICES.

Every operator of any mine within the provisions of this Act, shall, within 60 days after the passage of this Act, file or cause to be filed in the principal office of the Inspector of Mines a designation, duly verified, by such operator, designating a person upon whom all notices, warnings or processes, required to be served under the provisions of this Act, may be served in this State. The person so designated must have an office, place of employment or place of business within 10 miles of the principal place of business of such operator within the State, and such designation shall give the office, place of employment or place of business of such person so designated. Such designation shall be accompanied by the written consent of the person so designated, and shall continue in force until revoked by an instrument in writing designating in like manner some other person upon whom such notices or processes may be served, or until the filing in such office of a written revocation of said consent executed by the person so designated. If the person so designated dies or removes beyond 10 miles of the place of business of such operator, or files a revocation of his consent, the operator must, within 30 days thereafter, designate in like manner some other person upon whom such notices or processes may be served within this State.

Services upon such designated person of notices, warnings or processes shall, in all cases arising under this Act, be deemed service upon such operator; provided, however, that nothing herein contained shall be construed to prevent the said operator in person, or its officers or agents, if said operator be a corporation, or any employee of such operator, from being so designated. A failure on the part of of any operator to carry out the provisions of this section shall be deemed a violation of this Act.

Sec. 10. SECRECY OF RECORDS.

The Inspector or any Deputy Inspector, or any person employed by such Inspector or Deputy Inspector, or any person having access to the papers filed in the office of said Inspector, or in the office of any Deputy Inspector, shall not make public or reveal to any person or persons, either orally or in writing, all or any part of the contents of any report, complaint or document filed in the office of the Inspector of Mines of this State, or in the office of any of his Deputy Inspectors, or reveal or make public to any person or persons any knowledge or information in regard to the safety or physical or financial condition of any mine, mining rights, prospect or mining company or concern obtained by any of the aforesaid Inspector, Deputy Inspectors or employees, while in the exercise of their official duties. Nothing herein contained, however, shall be construed to

prevent any Inspector or Deputy Inspector, or any clerk, or employee of such Inspector or Deputy Inspector from making official reports to the Governor or Legislature of this State, to the Inspector of Mines, or to any Deputy Inspector, or from giving evidence in any court of justice in this State in discharge of his official duty. An Inspector of Mines, or any Deputy Inspector of Mines, or any employee or clerk who violates any of the provisions of this section of this Act, shall be guilty of a misdemeanor and shall be punished upon conviction by a fine of not more than $500, or by imprisonment of not more than one year, or both; and shall also be dismissed from his office or employment.

Sec. 11.—DUTIES OF INSPECTORS—INSPECTION—POWERS.

It shall be the duty of the Inspector of Mines by himself or by deputy to visit at least once every two months every mine in the State employing 50 or more men underground; and every other mine at least once every year and oftener if in his opinion the safety of the men employed within the mine so requires; and to inspect, inquire and examine into the operation, workings, timbering, safety appliances, machinery, sanitation, ventilation, means of ingress and egress, means taken to protect the lives and insure the safety of the miners, together with the cause of accidents and accidental death therein, and in general, to inspect and ascertain what means are taken to comply with the provisions of this Act. For the purpose of making such inspection and ascertaining facts in connection with such examination and inquiry, the Inspector, or his deputy, shall have full power and authority at all hours to enter and examine any part of any mine or mining plant within this State, or any part of the workings thereof. All operators and their employees shall render to the Inspector or his deputy such assistance as may be necessary to enable the Inspector or his deputy to make such examination.

For the purpose of ascertaining facts in connection with any inspection, inquiry or examination, the said Inspector, or any deputy, shall have full power to compel the attendance of witnesses by subpoena, and to take depositions, to administer oaths and to examine, cross-examine and take testimony of such persons as may be deemed necessary for the information of the Inspector or his deputies. Any person refusing to obey a subpoena issued by the Inspector, or by any deputy, or any person who shall wilfully in any manner hinder or obstruct the Inspector, or any of his deputies, in the performance of his or any of their duties, under this Act, shall be guilty of a misdemeanor. Any witness appearing before the Inspector, or before any of his deputies, in response to a subpoena so issued, who shall knowingly and wilfully testify falsely to any material matter, shall be deemed guilty of perjury, and upon conviction as by law provided, shall be punished for perjury.

Sec. 12. DANGEROUS MINES—DUTIES OF INSPECTORS.

Whenever the Inspector shall find any mine, or part of any mine, in an unsafe condition by reason of any violation of any of the rules or provisions of this Act, or in a condition dangerous or detrimental to the life or health of those employed therein, for the reason or by reason of defects in timbering, mining, ventilation or sanitation, it shall be the duty of the Inspector at once to serve or cause to be served a notice in writing upon the operator of such mine, and such notice shall set forth in detail the nature and extent of the defects which render the mine or part of the mine unsafe, dangerous, or detrimental to the life or health of those employed therein, together with the point or place in the mine, or in the workings of the mine, where such defects exist, and such notice shall require such necessary changes to be made in such mine or part of the mine without delay, and within a specified time in the discretion of the Inspector, to make the same conform to the provisions of this Act.

If it appears from a re-examination of the mine by the Inspector, or a Deputy Inspector, that such necessary changes have not been made within the time specified in such notice, and that the mine or part of the mine is still in a condition dangerous to life or health, and in the opinion

of the Inspector it is necessary for the safety or the life or health of the employees in such mine or part of the mine, that the same be vacated, it shall be the duty of the Inspector forthwith to institute an action for an injunction in any Court of competent jurisdiction, in the name of the State, at the relation of the Inspector, to restrain the operation and working of said mine, or part of said mine, and the permitting of employees therein for purposes other than to remedy the defects complained of, until the provisions of this law are complied with, and the said mine, or part of the mine, made safe for the employees therein; and the plaintiff in such action, without bond, and upon ex parte affidavits made by the Inspector, or a Deputy Inspector, showing in detail the nature and extent of the defects which, in such affiant's opinion, render the mine, or part of the mine, unsafe or detrimental to life or health of those employed therein, and stating that such mine, or part of the mine, is, in the opinion of the affiant, in a condition dangerous to life or health, may procure a temporary injunction, pending the trial of said action, from any Court or Judge in vacation, if, in the opinion of the Court or the Judge, the facts warrant the granting of such temporary injunction, enjoining the operation and working of said mine, or part of said mine, and the permitting of employees therein, except for the purpose of remedying the defects complained of, until the further order of the Court.

Provided, however, that the defendants in such actions shall have the same opportunity to be heard, upon motion to vacate such temporary injunctions, as defendants have in any actions brought in this State in which temporary injunctive relief may be granted.

Sec. 13. REFUSING INSPECTION. PENALTY.

If the operator of any mine within the State shall fail, impede or refuse to permit such inspection, as is provided in Sections 11 and 12 of this Act, the Inspector, or deputy, may file his affidavit setting forth such refusal before the Judge of the ———— Court in the County in which said mine is situated, either during the term of the Court or during vacation, and obtain an order directed to such operator, so refusing as aforesaid, commanding him to permit and furnish all necessary facilities for the entering, examination or inspection of such mine, or to be adjudged to stand in contempt of court and punished accordingly.

Sec. 14. RECORDS OF INSPECTION.

It shall be the duty of the Inspector, or any deputy, after every inspection made of any mine or parts of any mine, as provided in this Act, to enter forthwith in a book to be kept at the mine, and designated as the "Record of Inspection," the portions of the mine so inspected, the nature of such inspection, and every illegal defect observed in the state and condition of the mine, machinery and appliances; but nothing contained in or ommitted from such entry shall limit or affect the duty and obligation of the owner or operator of such mine under this Act. Such "Record of Inspection" shall be open at all reasonable times to the examination of the Inspector, or any of his deputies, or to the examination of any persons employed in the mine.

Sec. 15. COMPLAINTS TO INSPECTORS.

Whenever the Inspector receives a complaint in writing, signed by three or more persons employed in a mine, setting forth that the mine in which they are working is being operated contrary to law, and is dangerous in any respect to the health or lives of those employed therein, the Inspector must in person, or by deputy, examine such mine as soon as possible. The names of the persons making such complaint shall be kept secret by the Inspector, unless permission to disclose them be expressly granted by the persons making the complaint. Provided, however, that such complaint shall, in all cases, set forth the alleged violation of law observed, the nature of the danger existing at the mine, and the time when such violation and danger was first observed. If after such inspec-

tion, the Inspector finds the conditions, in his opinion, dangerous to the health and lives of those employed therein, by reason of any violation of any of the provisions and rules of this Act, he shall serve, or cause to be served, a notice, setting forth fully the facts upon which his opinion is based, upon the operator or any person having charge of such mine, as provided in Sec. 12 of this Act, and shall thereafter take such steps to remedy such danger and to compel compliance with the provisions and rules of this Act, as the Inspector could take in any case arising under Sec. 12 of this Act.

It shall be the duty of the Inspector or any deputy to forward every such original complaint, so received, to the office of the Inspector of Mines, where it shall be indexed and filed among the official papers of the Inspector of Mines.

Sec. 16. ACCIDENTS.

Whenever a serious accident occurs in or about any mine, notice thereof shall be given promptly in writing, to the Inspector by the Superintendent or other person having immediate charge of the work at the time of the accident. The words "serious accident" shall be construed to mean, for the purpose of this Act, accidents resulting in such injuries as, in the opinion of an accredited physician, may result in the injured person being incapacitated from work for at least 14 days. Upon receiving such notice the Inspector, or a deputy, shall, if feasible, and if the nature of the accident shows it to be necessary, proceed to the scene of the accident with all convenient speed and investigate fully the cause of the accident, and shall file the result of such investigation as a report in the office of the Inspector, within 20 days thereafter. Whenever the Inspector, or a deputy, cannot proceed as above to the scene of the accident, the person in charge of the mine shall be so informed by the Inspector, and such person in charge must secure sworn statements of those who witnessed the accident, or if no one was present at the time of such accident, he must secure the sworn statement of those first arriving upon the scene; such statements must give, as far as possible, the details of the accident, the facts leading up to it and its probable cause; such sworn statements shall immediately thereafter be sent to the Inspector, who shall file same in his office, as a public record.

Sec. 17. LOSS OF LIFE.

Whenever loss of life occurs from accident in or about a mine, and when death results from personal injury, the Superintendent or other person having immediate charge of the work at the time of the accident shall give notice to the Inspector, promptly after knowledge of death comes. Whenever possible, the Inspector or a deputy shall be present at every coroner's inquest held over the remains of a person killed in or about a mine. An inquest held by the coroner upon the body of a person so killed shall be adjourned by the coroner for not more than ———— days at the request of the Inspector. If the Inspector or any of his deputies are not present at such inquest, the coroner in such case shall notify the Inspector or his deputy intending to be present, in writing, of such adjourned inquest, and the time and place of holding the same at least five days previous thereto. Due notice of an intended inquest to be held by the coroner shall be given by the coroner to the Inspector, and at such inquest the Inspector and any Deputy Inspector shall have the right to examine and cross-examine witnesses, and such examination shall be part of the records of such inquest. If, at any inquest held over the body or bodies of persons whose death was caused by an accident in or about the mine, the Inspector or any deputy be not present, and it is shown by the evidence given at the inquest that the accident was caused by neglect or by any defect in or about the mine, or because the mine was operated contrary to the provisions of law, which in the opinion of the jury requires a remedy, the coroner shall send notice in writing to said Inspector of such reported neglect or default; and the said Inspector shall immediately take steps to have an investigation made of the same. The coroner before whom such an inquest is held shall promptly file with the

Inspector of Mines a copy of the testimony taken therat and a copy of the verdict rendered by the Coroner's Jury.

Sec. 18. INSPECTOR TO FORWARD PAPERS TO PROSECUTING OFFICER IN CERTAIN CASES.

Whenever, in the opinion of the Inspector of Mines, a serious fatal accident, in or about any mine in this State, shall have been caused by failure on the part of the operator or any employee of such mine, or by any other person or by any of them, to observe the provisions of this Act, it shall be the duty of such Inspector to cause a copy of the report of such accident, or a copy of the testimony taken at the corner's inquest together with the verdict of the coroner's jury, and all papers in his hands relating thereto, to be forwarded to the prosecuting officer of the County in which the accident or loss of life occurred, together with an accompanying statement of the Inspector, showing in what particular or particulars he believes the law to have been violated and if upon the receipt thereof the prosecuting officer of the said County deems the facts to make a prima facie cause of action against any party, he shall present such evidence to the Grand Jury and take such further steps for the criminal prosecution of such operators, employees, or other person, as may seem advisable.

Sec. 19. STATISTICAL REPORTS OF MINE INSPECTOR.

It shall be the duty of the Inspector of Mines within three months after January 1st in each year, to make a report directed to the Governor and Legislature of this State, giving a statistical summary and report of the work of the Inspector and Deputy Inspectors of Mines during the previous year ending December 31st. Such report shall contain a statement showing the number of men employed in each mine in the State, stating separately the number of men employed above ground and underground, the number and nature of fatal and serious accidents occurring in each mine, the number of inspections made, complaints filed, inquiries attended, mines ordered to be vacated, violations found and any other information deemed important and relevant by the Inspector of Mines, together with such recommendations as in the judgment of the Inspector of Mines are necessary or desirable to the carrying out of this Act and to insure the safety of the workmen employed within the mines, subject to the provisions of this Act. Copies of such report shall be published and distributed by and at the expense of the State as a public document.

Sec. 20. REMOVAL OF INSPECTORS AND DEPUTY INSPECTORS.

Upon a petition signed by at least 100 miners, or 10 operators, or by three operators each employing 100 men underground, setting forth that the Inspector, or any deputy, neglects his duties as prescribed in this Act, or that he is incompetent, and unqualified for the office of Inspector, or deputy, as the case may be, under this Act, or guilty of malfeasance in office, or guilty of any unlawful act tending to the injury of miners or the operators of mines, it shall be the duty of the Court of ———— of the County wherein such Inspector or Deputy Inspector resides, to issue a citation in the name of the State to the said Inspector, or said Deputy Inspector, to appear upon not less than 15 days' notice, on a day fixed, before said Court, and the Court shall then proceed to inquire into and investigate the allegations of the petitioners. If the Court shall find that said Inspector, or Deputy Inspector, so petitioned against, is neglectful of his duties, as prescribed in this Act, or that he is not qualified under the provisions of this Act for such office, or that he is incompetent to perform the duties of his office, or that he is guilty of malfeasance in office, the Court so finding any or all of such facts, shall certify the facts so found to the Governor of the State, in the case of such finding against an Inspector, and to the Inspector of Mines, in the case of such finding against a Deputy Inspector, and the Governor or Inspector, as the case may be, shall declare the office of Inspector or such Deputy Inspector vacant, and

steps shall forthwith then be taken to appoint a properly qualified person to fill such vacant office of Inspector or Deputy Inspector, as the case may be, for the remainder of the unfilled term of the removed official.

The cost of said investigation shall be borne by the removed Inspector or Deputy Inspector, but if the allegations in the petition are not sustained, the costs shall be paid by the petitioners.

Sec. 21. CARE OF INJURED.

It shall be the duty of operators, Superintendents or any one in charge of any mine where 10 or more men are employed, to keep at the mouth of the drift, shaft or slope, or at such other place about the mine as may be designated by the Inspector, a stretcher and a woolen and waterproof blanket, in good condition, for use in carrying any person who may be injured at the mine. Where more than 200 persons are employed, two stretchers and two woolen and waterproof blankets shall be kept. And at all mines a supply of antiseptic gauze, carbolated vaseline, sponges, soap, carbolic acid, tablets of bichloride of mercury, linseed oil, bandages, suitable towels and a wash basin shall be kept readily accessible for the treatment of anyone injured. Provided, that in all mines where 500 or more men are employed, a First Aid Corps must be organized, consisting of the foreman or foremen, shift bosses, timekeepers and other employees, designated by the Superintendent; and it shall be the duty of the operator or Superintendent of the mine to cause the organization of such; and to procure the services of a competent surgeon or physician to instruct the members of such First Aid Corps from time to time, not less than once in each calendar year, in the proper handling and treatment of injured persons before the arrival of a physician.

Sec. 22. MINE MAPS.

The operator of every mine, employing 10 or more men underground, shall make and maintain, or cause to be made and maintained, by a competent Mining Engineer or Surveyor, an accurate map of the workings of such mine. At least once in every six months, or oftener, if necessary, the operator or Superintendent of each mine shall cause to be shown accurately on the map of said mine, all the excavations made therein during the time elapsed since such excavations were last shown on said map, and all parts of said mine, which were worked out or abandoned during said elapsed period of time shall be clearly indicated on said map, and all underground workings shall be surveyed and mapped before they are allowed to become inaccessible. Such maps shall, at all times, be open to the examination of the Inspector of Mines or any of his deputies.

Sec. 23. FAILURE TO MAKE MAP. REMEDY.

Whenever any operator or Superintendent of any mine employing more than 10 men underground, shall neglect or refuse to make such map of the workings of any such mine, for a period of three months after the receipt of written notice so to do by the Inspector, or by any deputy, or fails at least once in every six months to add or cause to be added to such map all excavations made within said period, then and in either of such events the Inspector is hereby authorized to cause a correct survey and map of such mine to be made at the expense of the operator thereof, the cost of which shall be recoverable at law from said operator as other debts are recoverable by law. The amount advanced by the Inspector for making any map, as provided in this section, shall be considered as part of the expenses of his office and shall be paid as such.

Sec. 24. STORAGE OF INFLAMMABLE MATERIAL.

It shall be the duty of the operator or Superintendent of each mine to store, or cause to be stored, oils and other dangerously inflammable materials in a covered building, kept solely for such storage, which building shall be at least 100 feet from any other building and at least 300 feet from any powder magazine. The man in charge of such building, who

shall be the Superintendent, or a person expressly designated by him, shall permit only sufficient oil or other inflammable material to be taken from such buildings to meet the requirements of one day. If any oil or gasoline storage be so situated that leakage would permit the oil or gasoline to flow within the above specified distance, means to prevent such flow must be provided.

Sec. 25. STORAGE OF EXPLOSIVES.

No blasting powder or any high explosive containing nitroglycerine shall be stored in any mine. Provided, that nothing in this section shall be construed to prevent the operator of any mine from keeping sufficient blasting powder or other high explosive within such mine to meet the estimated requirements of such mine during the succeeding 24 hours; and provided, further, that such temporary supply shall not be kept at any place within such mine, where its accidental discharge would cut off the escape of miners working therein.

All blasting powder, or other high explosive, in excess of the temporary supply required in such mine shall be stored in a magazine placed not less than 300 feet distant from any shaft, adit, habitation, public highway, public railway, or from the boundary line of any mining property; provided, however, that in cases where the location of any mining property makes it impossible to comply with the provisions of this section, the Inspector may grant permission in writing to the operator of such mining property to place such magazine in some other place on such mining property, if, in the opinion of the said Inspector such location shall not be dangerous to the safety of those employed within such mine.

Every magazine where powder or other high explosive is stored as provided in this section, shall be ventilated; and if it be a building above the surface of the ground it shall be provided with a lightning conductor supported on a vertical post standing clear of such magazine, and not nearer than 18 inches from one of the walls thereof and rising at least six feet above the highest point of such magazine; such lightning conductor shall be carried to a properly laid earth plate, set in the ground at a depth below the permanent moisture line of the ground and at a distance of at least one foot outside of the foundation walls of said magazine.

It shall be the duty of the operator to enforce the carrying out of this section and any failure on the part of said operator so to do shall be deemed a violation of this Act.

Sec. 26. MARKING OF EXPLOSIVES.

It shall be unlawful for the operator or Superintendent of any mine to permit the use within such mine of any explosive containing nitroglycerine unless there shall be plainly printed or marked, in the English language, on every original package containing such explosive the name and place of business of the manufacturer of such explosive, together with the date of its manufacture.

Sec. 27. SUPERINTENDENT TO BE APPOINTED.

The operator of every mine, within the provisions of this Act, shall appoint a man who shall be personally in charge of the mine and the carrying out of the work done therein, who shall be designated as the "Superintendent"; provided, however, that nothing herein contained shall prevent the owner or operator of any mine from, personally, filling the office of "Superintendent."

The Superintendent of every mine shall inspect, or cause an inspection to be made by some competent person or persons appointed by him, of all mining appliances, boilers, engines, magazines, shafts, shaft houses, underground workings, roofs, pillars, timbers, explosives, bell ropes, speaking tubes, telephones, tracks, ladders, dry closets and all parts and appliances of said mine in actual use, and any such person or persons appointed by the said Superintendent shall at once report any defects therein to the Superintendent. It shall be the duty of the Superintendent upon ascertaining any such defects to take immediate steps to remedy the

same so as to make the same comply with the provisions of this Act; and he shall, forthwith, notify the operator of said mine of the existence of such defects. It shall be the duty of the Superintendent to appoint a competent man to have full charge, under the direction of said Superintendent, of every magazine containing explosives situated on such mining property; and to make such other appointments and perform such other duties as are provided by this Act to be performed by such Superintendent.

Sec. 28. MINE FOREMAN. APPOINTMENT.

The operator or superintendent of every mine, within the provisions of this Act, shall appoint a man who shall be personally in charge of the carrying out of the underground workings of the mine, and who shall personally direct the work of the men employed underground therein, who shall be designated as the "Mine Foreman"; provided, however, that nothing herein contained shall be construed to prevent the superintendent of any mine from also filling the position of Mine Foreman. No person shall be appointed to the position of Mine Foreman who shall not be at least 21 years of age, and shall not have had at least two years of practical experience as an underground miner in metalliferous mines, and who shall not be able readily to read and write the English language. Any operator or superintendent failing to make such appointment of Mine Foreman, or neglecting or failing immediately to appoint another in his place, in the event of said Mine Foreman vacating or losing his position from any cause, shall be guilty of a misdemeanor. Such appointment shall be made in writing, and it shall be the duty of such operator or superintendent to keep posted notice of such appointment or reappointment, immediately after the same shall have been made, in at least two conspicuous places about said mine, and notices of such appointment, or any reappointment shall be mailed immediately thereafter to the inspector of mines.

Sec. 29. DUTIES OF MINE FOREMAN.

The Mine Foreman shall attend personally to his duties in the mine, as provided in this Act, and shall see that the regulations provided herein for securing the safety of all men employed in such mine are carried out; he shall immediately report to the superintendent of the mine, or in the absence of the superintendent to the mine operator, any violations or infringements of this Act observed by him within the mine, and shall take immediate steps to remedy the same. He shall warn all employees of danger to life or limb observed by him within the mine, and permit no person to work in an unsafe place unless for the purpose of making it safe; and shall supervise the miners in the carrying out of their work.

Sec. 30. BLASTING.

Gang bosses shall be in immediate charge, and responsible for blasting within the mine. It shall be their duty to see that no iron or steel tools shall be used for tamping, and all miners are hereby forbidden to use iron or steel tools for such purposes under penalty of a misdemeanor. It shall be the duty of the Mine Foreman to fix the time of all blasting and firing. Gang bosses and miners about to fire shots shall cause warnings to be given in every direction, and all entrances to the place or places where charges are to be fired shall be guarded while such firing is going on. Failure on the part of gang bosses or miners to comply with the provisions of this section shall be deemed a violation of this Act. The number of shots exploding, except in cases of electric firing, shall be counted by the miner firing same. If said miner be not certain that all the shots have exploded, no one shall be permitted to enter the places where such charges were placed for a period of 30 minutes after the fuses were lighted. Such misfire, occurring at change of any shift, shall be reported to the Mine Foreman, Shift Boss and to the miner of the following shift.

In the event of shots fired by electricity, then it shall be unlawful for any person knowingly to enter the vicinity of the mine where such shots

are fired until the cable of the firing battery has been disconnected; it shall be the duty of the Gang Boss or miner in charge of the shot-firing to see that all such cables are disconnected immediately after such firing, and to examine, or direct the examination of such place where shots are fired, before any men are permitted to work therein. All miners shall immediately report to the Gang Boss, Shift Boss or Mine Foreman the finding of any loose wires under or in the rock loosened by such firing; and in such event the Mine Foreman, or in his absence the Shift Boss, or Gang Boss, shall at once order work to cease until such wires have been traced to their terminals. It shall be the duty of the Mine Foreman to see that no current of higher than 250 volts shall be used when firing by electricity.

It shall be unlawful for any miner to extract or attempt to extract explosives from a hole which has once been charged, but in every such case a fresh charge shall be inserted above the missed explosive, and the same shall be then detonated. It shall be unlawful for any miner to deepen holes, or any part of holes, left standing or abandoned, and theretofore charged with explosives.

Sec. 31. HOISTING ENGINEER.

It shall be the duty of every Superintendent of every mine having a hoisting engine to appoint and designate one or more men, who shall be able to speak and read the English language readily, to be known as Hoisting Engineers. At all shafts where men are hoisted or lowered such hoisting engineers shall be not less than 21 years of age, and at shafts where men are not so hoisted or lowered they shall be not less than 18 years of age. It shall be the duty of every Superintendent to appoint as Hoisting engineers men who are familiar with the details and working of a hoisting engine, and to permit no one, other than such duly appointed Hoisting Engineers, to run such engine or hoisting machinery, except that by and with the consent of the Superintendent specified apprentices may be taught the operation of the hoisting engine at such times and under such restrictions as the Superintendent may determine to be free of risk to life and limb. Any Superintendent failing to make such appointment of Hoisting Engineer, or knowingly appointing any Hoisting Engineer not qualified as above, shall be guilty of a violation of this Act.

Sec. 32. DUTIES OF HOISTING ENGINEER.

The following rules shall be observed by every Hoisting Engineer employed within this State:

Rule 1. It shall be the duty of every Hoisting Engineer to keep a careful watch over his engine and over all machinery under his charge.

Rule 2. He shall at all times be in immediate charge of his engine, and shall not at any time delegate any of his duties to any other person, except to apprentices, duly designated as provided in this Act; provided, however, nothing herein contained shall be construed to prevent any Hoisting Engineer delegating to or sharing his duties with any other duly appointed Hoisting engineer, or turning over the engine and machinery in his charge to any other such engineer at the end of his shift.

Rule 3. He shall familiarize himself with and use all signal codes for hoisting and lowering as directed to be used in this Act.

Rule 4. He shall not run his engine unless the same is properly provided with adequate brakes, indicators, and distance marks on hoisting ropes or cables, as provided in this Act.

Rule 5. It shall be the duty of the Hoisting Engineer to exclude every person from his engine room, excepting any person or persons whose duties require their presence therein, and visitors authorized by the Superintendent of the mine.

Rule 6. He shall hold no conversation with anyone while his engine is in motion, or while attending to signals.

Rule 7. He must run his engine with extreme caution whenever men are on the hoisting cage.

Rule 8. He shall not hoist men out of, or lower men into, any mine or shaft at a speed greater than 800 feet per minute.

Rule 9. He shall inspect all hoisting machinery and safety appliances connected therewith, and all ropes and hoisting apparatus, when and as directed by the Mine Superintendent, and shall report to him any defects found therein.

Rule 10. After any stoppage of hoisting for repairs, or for any other purpose exceeding in duration one hour, he shall run a cage or other conveyance, unloaded, up and down the working portion of the shaft at least once, and shall not permit the cage or other conveyance to be used until the hoisting machinery and shaft are found to be in safe condition.

Rule 11. He shall do no hoisting in any compartment of a shaft while repairs are being made in the said hoisting compartment, excepting such hoisting as may be necessary to make such repairs.

Rule 12. He shall familiarize himself with and carry out the requirements of Rules 7, 8, 9, 10, 11, 12, 19 and 20 of Sec. 37 of this Act.

Rule 13. Any Hoisting Engineer or any person having in charge the hoisting machinery connected with the mine who shall wilfully violate any of the provisions of this section, or any of the rules contained therein, or who shall wilfully violate any of the provisions of Rules 7, 8, 9, 10, 11, 12, 19 and 20 of Sec. 37 of this Act, shall, upon conviction, be deemed guilty of a violation of this Act and liable to punishment accordingly.

Rule 14. The Superintendent shall post a copy of this section and the last preceding section in a conspicuous place on the door of the engine house.

Sec. 33. HOISTING ROPES.

It shall be unlawful to use in any mine, included within the provisions of this Act, any rope or cable for hoisting or lowering either men or material, when such hoisting or lowering is done by any means other than human or animal power, unless such rope or cable shall be composed of iron or steel wires, with a factor of safety determined as hereinafter set forth; provided, however, that such iron or steel wires may be laid around a hemp center.

The factor of safety of all such ropes or cables shall in no case be less than five, and shall be calculated by dividing the breaking strength of the rope as given in the manufacturers' published tables, by the sum of the maximum load to be hoisted, plus the total weight of the rope in the shaft when fully let out, plus 10 per cent of such values, to take account of shock at starting and stopping.

It shall be unlawful to use any rope or cable for the raising or lowering of men, either when the number of breaks in any running foot of said rope exceeds 10 per cent of the total number of wires composing the rope, or when the wires on the crown of the strands are worn down to less than one-half their original diameter, or when the superficial inspection provided for in this section shows marked signs of corrosion.

All ropes must be superficially inspected once in every 24 hours by some competent person designated for that purpose by the Superintendent, and it shall be the duty of the Superintendent to cause an examination to be made once in every succeeding three months of a section of such rope or cable, then in use for hoisting and lowering men and materials in such mine. If upon any inspection such hoisting rope or cable is found to be below the requirements set forth in this section, it shall be disused for such purpose forthwith, and any operator or Superintendent using or permitting the use of such hoisting rope or cable for the purpose of hoisting or lowering men thereafter, shall be guilty of an offence against this Act.

Sec. 34. CAGES FOR HOISTING MEN.

It shall be unlawful for the operator or Superintendent of any mine to permit the hoisting or lowering of men through a vertical shaft deeper than 300 feet, unless an iron-bonneted safety cage be used for hoisting and lowering of such men, but this provision shall not apply to shafts in process of sinking.

It shall be the duty of the operator or Superintendent to have all cages used in such shafts, over 300 feet deep, and in which men are hoisted and lowered, to be constructed as follows: The bonnet shall be of two steel plates, 3-16 inches in thickness, sloping toward each side, and so arranged that they may be readily pushed upward to afford egress to persons therein, and such bonnet must cover the top of the cage in such a manner as to protect those on the cage from objects falling in the shaft. The cage shall be provided with sheet iron or steel side casing, not less than one-eighth inch thick, or with a netting composed of wire not less than one-eighth inch in diameter, and with doors made of the same material as the side casing, either hung on hinges or working in slides. These doors shall extend at lease four feet above the bottom of the cage and must be closed when lowering or hoisting men, except timbermen riding on the cage to attend to timbers that are being lowered or hoisted. Every cage must have overhead bars of such arrangement as to give every man on the cage an easy and secure hand-hold. Every cage or skip used for hoisting men must be provided with a safety catch of sufficient strength to hold the cage or skip with its maximum load at any point in the shaft in the event that the hoisting cable should break. The Inspector or his deputy must see that all cages and skips are equipped in compliance with this paragraph, and that on all cages the safety catches are kept well oiled and in good working condition.

Any operator or Superintendent of any mine failing to comply with the provisions of this section, within 90 days after its passage, shall be guilty of an offence against this Act.

Sec. 35. BOILERS AND CONNECTIONS, MACHINERY, ETC., INSPECTION.

All boilers used for generating steam in and about mines shall be kept in good order, and the owner, operator or Superintendent shall have them examined and inspected by a qualified person, not an employee of said operator, as often as once in six months, and oftener if the Inspector or his deputy shall deem it necessary. The result of such examination, under oath of the person making such examination, shall be certified in writing to the Inspector within thirty (30) days thereafter.

It shall be the duty of the operator to provide each battery of boilers with a safety valve of sufficient area for the steam to escape and with weights or springs properly adjusted; and to provide every boiler house with a steam gauge properly connected with the boilers, to indicate the steam pressure, and another steam gauge shall be attached to the steam pipe in the engine house. All steam gauges shall be placed in such position that the Engineer or Fireman can readily examine them and see what pressure is carried. All steam gauges shall be kept in good order, and shall be tested and adjusted as often as once in every six months and their condition reported to the Inspector in the same manner as the report of boiler inspection.

All machinery used in or about the mine, such as engines, wheels, screens, shafting and belting shall be protected by covering or railing so as to prevent persons from inadvertently walking against or falling upon the same. The sides of stairs, trestles and dangerous plank walks in and around the mines shall be provided with hand and guard railing to prevent persons from falling over the sides. This section shall not forbid the temporary removal of a fence, guard rail or covering for the purpose of repairs or other operations, if proper precautions are used, and the fence, guard rail or covering is replaced immediately thereafter. It shall be the duty of the operator to carry out the foregoing provisions of this section, and failure to comply with the provisions of this section shall be deemed an offence against this Act.

Sec. 36. PROHIBITED EMPLOYMENT OF WOMEN AND CHILDREN IN MINES.

No woman or girl, and no boy under the age of 16 years, shall be employed or permitted to work within any mine within this State, included

in the provisions of this Act; and it shall be unlawful for any operator to employ such persons within such mine. Before any boy shall be permitted to work in any mine he must produce to the operator, Superintendent or Mine Foreman thereof, an affidavit made by the parent, guardian or next of kin of said boy, duly verified, containing a statement that he, the said boy, is at least 16 years of age.

Any person who violates and does not comply with the provisions of this section is guilty of an offence against this Act.

Provided, however, that nothing in this section contained shall be construed to prevent the employment of women, or children under 16 years, in clerical or office positions in the offices or buildings connected with such mine.

Sec. 37. RULES.

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The following general rules shall be observed in and about every mine within this State to which this Act applies:

Additional Duties of Mine Foreman and Assistant Mine Foremen.

Rule 1. The operator or Superintendent of every mine shall use every precaution to insure the safety of the workmen in the mine in all cases, whether provided for in this Act or not, and shall place the underground workings thereof and all that is related to the same under the charge and daily supervision of a competent person, who shall be called "Mine Foreman."

Rule 2. Whenever a Mine Foreman cannot personally carry out the provisions of this Act, so far as they pertain to him, the operator or Superintendent shall authorize him to employ a sufficient number of com-

petent persons to act as his assistants, who shall be subject to his orders, and shall be known as "Assistant Mine Foremen," and they shall be under the direct supervision of the Mine Foreman and shall carry on the duties of the Mine Foreman as directed by him, and as prescribed in Sec. 29 of this Act.

Rule 3. The Mine Foreman shall have charge of carrying out or directing the carrying out of his duties as prescribed in Sec. 29 of this Act; and any Superintendent who shall direct or cause a Mine Foreman to disregard the provisions of this Act shall be amenable in the same manner as the Mine Foreman.

Rule 4. The Mine Foreman shall see that all dangerous places are properly fenced off and proper danger signal boards are so hung on such fencings that they may be plainly seen.

Candles.

Rule 5. No candle shall be left burning in a mine or any part of a mine when the person using the candle departs from his work for the day.

Fire Fighting Helmets.

Rule 6. The operator or Superintendent of a mine employing more than 50 men underground shall provide, and keep in a readily accessible place, at least two fire fighting helments, to be used in case of emergency.

Cages.

Rule 7. At all mines where hoisting is done by cage or skips from two or more levels a man shall be employed, whose duties shall be to load and unload the cage or skip and to give all signals to the hoisting engineer. The Superintendent is responsible for the enforcement of this rule.

Rule 8. Any person riding upon any cage, skip or bucket that is loaded with tools, timber, powder or other material, except for the purpose of assisting in passing such material through a shaft or incline, and then only after a special signal has been given, shall be guilty of a violation of this Act.

Rule 9. When tools, timber or other materials are to be lowered or hoisted in a shaft, their ends, if projecting above the top of the bucket, skip or other vehicle, shall be securely fastened to the hoisting rope or to the upper part of the vehicle, and all tools, timber and other materials loaded upon a cage must be securely lashed before being lowered or hoisted.

Hoisting While Shaft-Sinking.

Rule 10. In no case shall a cage, skip or bucket, or other vehicle, be lowered directly to the bottom of the shaft when men are working there; but such cage, skip or bucket or other vehicle must be stopped at least 15 feet above the bottom of such shaft until the signal to lower further has been given to the hoisting engineer by one of the men at the bottom of the shaft; provided, however, that this rule shall not apply to shafts of less than 50 feet in depth.

Deepening Shaft—Protection.

Rule 11. Persons engaged in deepening a shaft in which hoisting from an upper level is going on shall be protected from the danger of falling material by a suitable covering extending over the whole area of the shaft, sufficient openings being left in the covering for the passage of men, a bucket or other conveyance used in the sinking operations. It shall be the duty of the Superintendent of the mine to enforce this rule, and failure so to do shall be deemed a violation of this Act.

Rule 12. No hoisting shall be done in any compartment of a shaft while repairs are being made in that compartment, excepting such hoisting as is necessary in order to make such repairs.

Rule 13. Whims in use at or in mines shall be provided with a suitable stopper, or some other reliable device, to prevent running back of the bucket or other conveyance.

Hooks.

Rule 14. No open hook shall be used with a bucket in hoisting. Safety hooks only shall be employed.

Crossheads.

Rule 15. All shafts more than 300 feet deep, from which hoisting is done by means of a bucket, must be provided with suitable guides, and in connection with the bucket there must be a crosshead traveling upon these guides. The height of the crosshead shall be at least two-thirds of its width. If the crossheads be a type that is not secured to the hoisting rope, a stopper must be securely and rigidly fastened to the hoisting rope at least seven feet above the rim of the bucket.

Signals.

Rule 16. Every shaft, if exceeding 50 feet in depth, shall be provided with an efficient means of interchanging distinct and definite signals between the top of the shaft and the lowest level and the various intermediate levels from which hoisting is being done. The signalling apparatus shall be a cord or wire actuating a knocker, bell or whistle, which may be supplemented by a speaking tube, or telephone, or an electrical system.

Rule 17. Special care must be taken to keep the signalling apparatus in good order.

Punishment for Interference With Signals.

Rule 18. Any person who shall interfere with or impede any signalling in the mine within this State, or who shall knowingly damage any such signal system, or who shall knowingly give or cause to be given any wrong signal within the mine, or who shall ride upon any cage, skip or bucket at a time when signals have been given informing the hoisting engineer that no person is so riding shall be guilty of a violation of this Act, and shall be punished accordingly.

Signal Codes.

Rule 19. The following signals shall be used: One bell, hoist (when engine is at rest); one bell stop (when engine is in motion); two bells, lower; three bells, men on cage about to ascend or descend; four bells, blasting signal. Upon receiving the blasting signal of four bells the engineer must answer by raising the bucket a few feet and leting it back slowly, and then upon receiving the signal of one bell he shall hoist the men away from the blast.

Rule 20. Special signals in addition to the above may be used in any mine, provided they are easily distinguishable by their sound, or otherwise, from the foregoing code and do not interfere with it in any way.

Rule 21. An easily legible copy of the above code, and of any special code adopted in any mine, shall be printed on a board or metal plate not less than 18 inches by 18 inches, and shall be securely posted in the engine room, at the collar of the shaft and at each level or station. The Superintendent of the mine shall be held responsible for the carrying out of this rule.

Timbering.

Rule 22. The timbers in all manways in daily use shall be cleaned of all loose rock lodged upon them at least once in every 24 hours. Manways in daily use shall be kept clear of obstructions.

Fencing Disused Shafts.

Rule 23. The mouth of every shaft or entry to a mine which for the time being is out of use, or is used only as an airway, and the approach to every open working other than ordinary prospecting trenches, and all elevated and exposed platforms and gangways, shall be kept securely fenced or otherwise protected.

Abandoned Shafts.

Rule 24. All abandoned shafts or other abandoned excavations shall be securely covered or fenced; provided, however, that in the case of abandoned open cuts fencing only shall be required.

Penalty for Destroying Fences and Coverings.

Rule 25. Any person who shall wilfully remove, injure or destroy all or any part of any coverings or fences provided for in Rules 23 and 24 of this section shall be guilty of a violation of this Act and shall be punished accordingly.

Lighting.

Rule 26. Stationary lights shall be provided during the working hours at all stations at vertical and inclined shafts during the time the same are in actual use; and also at all stations on the levels where hoisting or hauling is effected by means of machinery; and also at night at all working places on the surface, and at the head of any shafts not fenced or covered.

Rule 27. All places where hoisting, pumping or other machinery is erected, and in the proximity of which persons employed in the mines are working or moving about, shall be so lighted that the moving parts of such machinery can be clearly distinguished.

Manholes.

Rule 28. In every mine in which mechanical haulage is employed there shall be at intervals of not more than 100 yards, on each main haulage way, places of refuge, affording a space of at least two and one-half feet in width between the widest portion of the car or train running on the tramway and the side of the gallery.

Rule 29. Every manhole and place of refuge shall be kept constantly clear, and no refuse shall be placed therein, and no person shall in any way prevent access thereto.

Machinery and Protection.

Rule 30. All exposed machinery which when in motion would be dangerous to persons coming in contact therewith shall be securely guarded by a fence or railing. All electrical conductors shall be placed so as to protect any persons, so far as is possible, from coming into contact with the same.

Rule 31. No electrical current higher than 250 volts shall be carried by any naked wire in any mine.

Protection Against Water.

Rule 32. No raise shall be allowed to approach within 10 feet of any portion of a winze, stope or other opening in which there is a dangerous accumulation of water, unless such winze or stope be first unwatered by bailing or pumping or by means of a bore from the raise.

Rule 33. When advancing a drift, adit level or incline toward a mine working that is suspected to be filled with water, a bore hole must be kept at least 20 feet in advance of the breast of the drive; and also if necessary in directions laterally from the course of the drive. Such a working place must not exceed six feet in width and such additional precautionary measures shall be taken as may be deemed necessary to obviate the danger of a sudden breaking through of water.

Rule 34. In every mine, where in the opinion of the Inspector of Mines, there is danger of a sudden inburst of water, such additional raises, drifts, or other workings shall be constructed as are necessary in the opinion of the Inspector to ensure the escape of workmen from the lower workings.

Ladders and Ladderways.

Rule 35. The space between the rungs of a ladder shall not exceed 12 inches.

Rule 36. The rungs of a ladder shall in no case be less than three inches from the wall of the shaft, or any opening in which it is used.

Rule 37. Every ladderway constructed and fixed in a vertical shaft

more than 100 feet deep which may be used for the ascent and descent of persons working in the mine shall have substantial platforms at intervals of not more than 20 feet and the inclination of any ladder or section of a ladder shall not exceed 80 degrees from the horizontal.

Rule 38. All platforms except for an opening large enough to permit the passage of a man shall be closely covered.

Rule 39. Ladders shall project at least three feet above every platform in the ladderway and at least three feet above the collar of the shaft, unless hand rails are fixed at such places.

Rule 40. In ladderways not exceeding 100 feet in depth, ladders may be fixed vertically; over this depth no vertical ladders shall be used.

Rule 41. Under no circumstances shall any ladder inclining backward from the vertical be installed.

Rule 42. Ladderways shall be provided in all shafts in the course of sinking to within such a distance from the bottom thereof as will secure them from damage by blasting, but from the end of which ladderways chain or wooden extension ladders shall be extended to the bottom of the shaft.

Enforcement of Rules 37 to 42.

Rule 43. It shall be the duty of the Superintendent to enforce the carrying out of Rules 35 to 42, and his failure so to do shall constitute a violation of this Act.

Passageway Around Shaft.

Rule 44. All stations or levels shall have a passageway around or through the working shaft so that crossing over the hoisting compartment may be avoided.

Sumps.

Rule 45. All sumps shall be securely planked over.

Stopes.

Rule 46. In stopes timbered with square sets, the working floors shall be closely and securely lagged over. Lagging shall be long enough to reach clear across the caps.

Winzes or Raises.

Rule 47. Winzes or raises shall not be started in the direct line of a drift, but shall be offset from the drift.

Rule 48. The opening of such offset winze shall be protected by a fence or guard rail not less than three feet or more than four feet in height above the level of the drift.

Rule 49. Existing winzes opening directly from the floor of a drift or stope must be kept covered by a substantial hatch, or planking, except when in use, at which time passage to persons other than those working at the winze shall be barred off by a substantial rail across the roads of access to the openings.

Shaft Station.

Rule 50. At all shaft stations a gate or a guard rail not less than three feet or more than four feet above the floor, must be provided and kept in place across the shaft, except when cage, skip or bucket is being loaded, but this prohibition shall not forbid the temporary removal of the gate or rail for the purpose of repairs or other operations, if proper precaution to prevent danger to persons be taken.

Top of Shaft.

Rule 51. The top of all shafts shall be protected by a gate, so that persons or foreign objects cannot fall into the shaft.

Rule 52. If hoisting be done from greater depth than 100 feet, by means of a bucket, shaft doors must be constructed that will prevent any material from falling into the shaft while the bucket is being dumped.

Hoisting Ropes.

Rule 53. Every rope used for hoisting or lowering men or materials shall be securely fastened to its drum and when in use shall never be fully unwound, but at least one full turn shall remain on the drum.

Rule 54. The further end of the rope shall either be securely fastened within a tapered socket, or else it shall be bound around an oval thimble and then fastened to itself by not less than 12 clamps or bolts.

Rule 55. Every rope shall be treated with oil or some suitable rope compound at least once every month. Such compound must be chemically neutral, and must be of such consistency as to penetrate the strand and not merely cover the surface of the rope.

Explosives and Fuses.

Rule 56. Every mine thawing in excess of a daily average of 100 pounds of dynamite shall be provided with a separate building for that purpose.

Rule 57. Dynamite shall not be thawed by any means other than a steam bath or a hot water device, and such thawing device shall not be allowed to become hotter than can be borne by the naked hand.

Rule 58. It shall be unlawful to thaw dynamite by placing it near a fire or steam boiler.

Rule 59. It shall be unlawful to thaw dynamite in a steam bath by using live steam.

Rule 60. It shall be unlawful for any person knowingly to distribute frozen dynamite to any person working in any mine.

Rule 61. No explosive shall be taken into any mine except in a securely covered case.

Rule 62. Detonators shall not be transported in the same vehicle or carried in the same case with dynamite or other explosive.

Rule 63. No fuse shall be used in any mine that burns faster than one yard in eighty seconds or slower than one yard in one hundred seconds.

Rule 64. It shall be unlawful for any person to use within any mine any fuse unless the rate of burning be stamped by the manufacturer on the package containing such fuse.

Rule 65. Notice shall be posted at the entrance of every mine stating the rate of burning of the fuse used in such mine. The Superintendent shall be responsible for the carrying out of this rule.

General Rules.

Rule 66. No person in a state of intoxication shall be allowed to enter or loiter about a mine.

Rule 67. All employees shall inform the mine foreman or his assistant of the unsafe condition of any working place.

Rule 68. Wages shall not be paid on any premises used for the sale of intoxicating liquors.

Rule 69. No intoxicating liquors shall be taken into a mine.

Rule 70. Strangers or visitors shall not be allowed underground in any mine unless accompanied by the operator or an official of the mine, or by an employee deputized by such operator or official to accompany them.

Rule 71. Every mine employing more than twenty-five men shall maintain a suitably equipped wash room which shall at all times be open to the employees of the mine.

Rule 72. Each workman employed in the mine when engaged shall have his attention directed by the mine foreman to the general and special rules provided for in this Act.

Rule 73. Any person who does any act wilfully in violation of any of the rules as prescribed in this Act shall be guilty of a misdemeanor.

Sec. 38. TWO OPENINGS TO SURFACE.

It shall be the duty of every operator of every mine within this State, excepting as hereinafter provided, to maintain at least two outlets to the surface from such mine; or an underground communicating passage way between every such mine and some other contiguous mine, so that there shall be at all times at least two distinct and available means of access to the surface to all persons employed in such mine or mines. Such out-

lets shall not be less than 50 feet apart and shall, if covered, be provided with separate and distinct and non-connecting houses on the surface.

Where two openings to the surface shall not have been provided as aforesaid, it shall be the duty of the Inspector of Mines to order in writing, served upon the operator or Superintendent of such mine, a second opening to be made without delay by the operator of said mine, and in the event of the operator of such mine failing forthwith to commence and prosecute the making of a second opening within twenty days after the service of said order, or in the event of the Inspector deeming any mine having but one such opening to be dangerous to the lives and health of those employed therein, it shall thereupon be the duty of such Inspector forthwith to institute an action for an injunction to close said mine, provided for in Section 12 of this Act.

Provided, however, that Section 38 of this Act shall not apply in the case of (A) New workings being opened for the purpose of making a communication between two or more shafts, or to any working for the purpose of searching for or providing ore; (B) Or to any mine in which one of the shafts or outlets has temporarily become unavailable for the persons employed in the mine, and in which every effort is being made by the operator of the mine to open such temporarily unavailable outlet, and provided the same is not, in the opinion of the Inspector dangerous to the life and health of those employed therein; and (C) Mines having workings of less than 100 feet in depth.

Sec. 39. OPENINGS THROUGH CONTIGUOUS MINES. ALL COMMUNICATING OUTLETS BETWEEN CONTIGUOUS MINES SHALL BE ESTABLISHED BY AGREEMENT BETWEEN THE OWNERS THEREOF.

When communicating outlets have been established between contiguous mines, it shall be unlawful for the operator of either mine to close the same without the consent of both the contiguous operator or owner, and the Inspector of Mines.

Provided, however, that when such contiguous outlets have been established, each operator, unless it shall have been otherwise provided by agreement, shall pay a fair proportionate share of keeping such openings in such condition that men working in such contiguous mines may have access to the surface thereby.

Provided, further, that in the event of either operator desiring to abandon mining operations, the expense and duty of maintaining such communications shall devolve upon the party continuing operations and using the same.

In the event of failure or refusal on the part of one contiguous operator to keep such opening in safe condition, the other contiguous operator shall have access thereto for the purpose of repairing and maintaining the same. When operators of contiguous mines have, by agreement, established underground communications between said mines as escapement outlets for the men employed in both, it shall be the duty of each operator to cause such communicating outlets in each operator's mine to be inspected at least once in every twenty-four hours; and it shall be the duty of each operator to see to it, within their respective mines, that the same are kept clear of every obstruction to travel and that intervening doors, if any, shall be kept unlocked and ready at all times for immediate use.

Sec. 40. PROVISIONS AFFECTING MINES HAVING BUT ONE OUTLET.

In every mine within this State, where under the provisions of Section 38 of this Act but one outlet is required, and where a single shaft affords the only means of ingress or egress to persons employed underground, such shaft if more than 200 feet deep shall be divided into at least two compartments. One of said compartments shall be set aside and used exclusively as a ladder way. Whenever such ladder way com-

partment shall be covered by a non-fireproof building, it shall be the duty of the operator of said mine to cause said ladder way to be securely bulkheaded at a point at least 25 feet below the collar of the shaft; and below this bulkhead, if the shaft is situated upon a side hill, a drift shall be driven to the surface; if the shaft containing said ladder way be otherwise situated this drift shall be driven on a level to a safe distance, but in no case less than 30 feet beyond the walls of the building covering the main shaft, and from such point a raise shall be made to the surface. The said raise shall be equipped with a ladder way, and it, together with the drift connecting with the main shaft, shall be kept in good repair and shall afford an easy exit in the event of fire. A failure on the part of the operator of said mine to carry out or cause to be carried out the provisions of this Section shall constitute a violation of this Act.

Sec. 41. OUTLETS NOT TO BE COVERED BY HOUSES.

It shall be unlawful for the operator of any mine within this State, after the passage of this Act, to erect any structure over the shaft or outlet of any mine, except head frames necessary for hoisting from such shaft or outlet, and the hatch or door necessary for closing such shaft or outlet.

Provided, however, it shall be lawful to erect a housing of non-inflammable and fireproof material over such shaft or adit to protect the men working at such point. In the case of existing houses covering the mouths of shafts or adits, it shall be the duty of the Superintendent of the mine to cause the immediate removal of all inflammable material stored therein, and it shall be the further duty of such Superintendent to prohibit the storage of any inflammable material within thirty feet from the exterior walls of any such existing house or within a like distance from the walls of any housing hereinafter built under the provisions of this Section. A failure on the part of any such Superintendent to enforce the provisions of this Section relative to the storage of inflammable materials, shall be deemed a violation of this Act.

It shall be the duty of every operator to provide every adit, the mouth of which is covered by a house or building of any kind, with a door near the mouth of the adit, that can be closed from outside of the building by a pull wire or cable in the event of fire.

Sec. 42. LADDERWAYS AND LADDERS.

It shall be the duty of the owner or operator of every mine to provide in addition to any mechanical means of ingress or egress, at least one means of outlet for the miners by means of ladders, from the lowest workings of the mine to the surface. All ladders and ladder ways, constructed after the passage of this Act, shall be built as prescribed in Rules 35 to 42 of Section 37 of this Act. All floors of setts in stopes and every shaft, winze, raise or incline steeper than 35 degrees from the horizontal through which men are obliged to pass, shall be provided with ladders and ladderways as specified in this Section.

Sec. 43. VENTILATION.

The operator of every mine, whether operated by shaft, slope or drift, shall provide and maintain for every such mine a good and sufficient amount of ventilation for such men and animals as may be employed therein, and shall cause an adequate amount of pure air to circulate through and into all the shafts, winzes, levels and all the working places of such mine.

Sec. 44. SANITATION. DRY CLOSETS.

It shall be the duty of the operator of every mine, for the purpose of improving the sanitation thereof, and preserving the health of those employed therein, to provide dry closets for the use of all men employed in such mines. At least one of such closets shall be placed on every level

where an average of twenty-five or more men are employed, at any one time, and at least one such closet shall be provided for every twenty-five men employed within such mine. No dry closet shall be constructed without adequate provision for the effectual cleansing and removing of the contents thereof, which shall be removed and disposed of from time to time. It shall be the duty of the Mine Foreman to cause each dry closet to be supplied with some disinfectant or deodorizer to be sprinkled upon the contents thereof. It shall be the duty of all men employed within any mine where such closets are provided to use such closets exclusively when in the mine. Any operator of any mine who shall neglect or fail to provide closets, as required by this section, for use in any such mine, shall be deemed guilty of a violation of this Act.

Sec. 45. ROOF INSPECTION.

In all mines where stoping is done by the opening of chambers, the roof thereof being supported only by the walls of the chambers, or by pillars, it shall be the duty of the superintendent of the mine to detail a competent man to make a frequent inspection of the roof of these parts of the mine where men are employed, and said man so detailed shall be charged with the duty of dislodging any slabs of rocks in said roof which have become loose. While such dislodgment is being effected, the floor of the stope immediately beneath such loose rock shall be fenced off or otherwise adequately guarded.

Sec. 46. SAFETY PILLARS.

It shall be the duty of the owner or operator of every underground mine to leave standing on the inside of the boundary line of every mining property, safety pillars the width of which must not be less than 30 feet, measured at right angles from the said boundary line.

Provided, however, that on the application of either owner of adjoining mines, the Inspector may give permission in writing to either or both owners to weaken, cut through or work such pillars, if in the opinion of the Inspector the same will not be dangerous to the lives of those employed within either of said mining properties. Such consent, or a copy thereof, shall be filed in the office of the Inspector. The failure of the operator of either or both of such adjoining mining properties to observe the provisions of this section, shall be deemed a violation of this Act.

Sec. 47. INTOXICATING LIQUOR PROHIBITED IN MINES.

Whoever shall, while under the influence of intoxicating liquor, enter any mine, or any of the buildings connected with the operation of the same within this State, where miners or other workmen are employed, or whoever shall carry intoxicating liquors into the same, shall be deemed guilty of an offense against this Act, and upon conviction shall be punished accordingly.

Provided, however, nothing herein contained shall prevent the carrying of any alcoholic spirits of liquor into such mine or buildings for the purpose of administering to any one injured therein.

Sec. 48. PENALTIES.

Any wilful neglect, refusal or failure to perform the duties imposed and required to be performed by any section, clause, provision or rule of this Act, on the part of the parties or persons therein required to perform them, or the violation of any of the provisions or requirements thereof, shall be deemed a misdemeanor punishable by a fine not exceeding five hundred dollars, or by imprisonment for a period not exceeding six months, or both, at the discretion of the Court.

For any injury to person or property, occasioned by any wilful violation of this Act, or wilful failure to comply with any of its provisions, by any owner, operator or superintendent of any metalliferous mine or quarry within this State, employing at least ten men, a right of action shall accrue

to the party injured for any direct damages sustained thereby, against said owner or operator, and in case of loss of life by reason of such wilful violation and wilful failure, as aforesaid, a right of action shall accrue to the widow and lineal heirs or adopted children of the person so killed, for a like recovery for damages for injury sustained by reason of such loss of life, not to exceed the sum of Five Thousand Dollars. Provided that all suits brought under this section shall be commenced within one year from the time any cause of action shall have accrued under this section, and not afterward.

Sec. 49. COPY OF ACT TO BE POSTED.

It shall be the duty of the superintendent of every mine within the provisions of this Act to post or cause to be posted, at all times, in the office of said mine and on a building or board in some conspicuous place at each entrance to the mine, a printed copy of this Act.

Any person who wilfully removes, injures or defaces any such printed copy, when so posted, shall be guilty of a violation of this Act.

Sec. 50. REPEAL OF INCONSISTENT LAWS.

All laws or parts of laws inconsistent with the provisions of this Act are hereby repealed.

Sec. 51. ACT TO TAKE EFFECT.

This Act shall take effect on the————————day of————————, 19—.

(N. B. At least ninety days after the passage of the Act, so as to prepare the miner and operator to the changed conditions.)

APPENDIX B.

FATAL ACCIDENTS IN AMERICAN METAL MINES

The occurrence of fatal accidents in American metal mines has heretofore attracted less attention than the importance of the industry demands. It may be conservatively estimated that metal mining in the United States in 1910 employs approximately 150,000 persons, exclusive of salaried officials and clerks. The census report on mines and quarries for 1902 returned the number employed in metal mines at about 110,000, but it is doubtful whether the total number of wage earners was accurately enumerated for some of the mining States. The rapid progress of the industry during the intervening period makes it practically certain that the number

TABLE 1. NUMBER OF PERSONS KILLED BY ACCIDENT IN THE METALLIFEROUS MINES OF NORTH AMERICA, 1894-1908.

	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Colorado	...	...	97	110	108	103	107	121
Michigan—Dickinson County	...	6	14	10	11	9	19	27
" Houghton County	22	46	19	26	23	27	36	33
" Marquette County	...	...	...	17	19	26	24	29
Missouri	17	23	13	16	29	27	52	41
Montana	27	41	64	52	48	49	47	35
Newfoundland—Copper	...	...	...	...	...	...	3	...
" Iron and pyrites	...	...	...	...	...	...	...	1
Nova Scotia—Gold	...	1	2	1	4	...	...	1
Ontario—Silver and cobalt	...	...	...	...	1	...	1	...
" Gold	...	...	2	1	2	11	10	...
" Iron ore	...	...	...	...	...	...	...	3
" Copper and nickel	...	...	1	...	2	3	7	9
British Columbia	...	...	...	...	6	16	13	14
United States	66	116	207	231	238	241	285	286
Canada	...	1	5	2	15	30	34	28
Grand total	66	117	212	233	253	271	319	314

	1902.	1903.	1904.	1905.	1906.	1907.	1908.	Total.
Colorado	82	67	101	109	82	77	64	1,228
Idaho	...	20	10	20	17	18	10	95
Michigan—Dickinson County	10	16	9	9	15	7	4	166
" Houghton County	44	33	45	58	44	49	58	563
" Marquette County	29	23	15	22	22	37	16	279
Missouri	14	17	30	49	58	42	46	474
Montana	47	39	41	48	52	42	21	653
South Dakota	13	8	...	8	7	6	6	48
Newfoundland—Copper	1	4	2	...	2	...	...	12
" Iron and pyrites	5	2	1	6	1	...	...	16
Nova Scotia—Gold	1	...	...	1	6	2	...	39
Ontario—Silver and cobalt	...	...	1	...	2	15	24	43
" Gold	...	2	6	...	...	...	3	37
" Iron ore	3	3	...	1	2	...	3	15
" Copper and nickel	7	2	1	6	3	4	15	60
British Columbia	12	15	14	14	17	20	21	162
United States	239	223	251	323	297	278	225	3,506
Canada	29	28	25	28	33	41	66	365
Grand total	268	251	276	351	330	319	291	3,871

employed at present is not much less than 150,000. The principal branches of metal mining in the United States, in the order of their quantitative importance, are iron, copper, gold and silver, lead and zinc, and quicksilver. In 1902, before the copper industry had attained its present importance, the distribution of mine labor was as follows: 38,851 men employed in the iron mines; 36,142 in the gold and silver mines; 26,007 in the copper mines; 7,881 in the lead and zinc mines; and about 1,500 persons employed in the mining of quicksilver.

NEED OF EFFECTIVE LEGISLATION FOR METAL MINE INSPECTION.

For most of these industries the present information regarding the occurrence of fatal accidents is very limited and of more or less doubtful value. Official returns are available for only a few of the more important metal-mining States, but even for these the data, as a rule, are presented in the aggregate, and not with a due regard to the various branches of the metal-mining industry. The corresponding returns for the Canadian provinces are in greater detail, and they have therefore been included in the present discussion for the purpose of convenient comparison. While every effort has been made to make the returns complete, it has been impossible to secure the necessary data for South Dakota for 1904. No returns are available for the metal mines of California, Nevada, Utah, Arizona and a number of other States in which the industry is of sufficient importance to warrant official supervision of mining operations and the official publication of the essential facts regarding the industry.

Table 1 exhibits in detail for the several States and the Canadian provinces the number of fatal accidents in metal mines officially returned since 1894. For some of the States and provinces the information is available for only recent years, while for others the data are not available for the entire period. The lack of accurate information is not to the credit of the various States, which have been decidedly derelict in this matter. There are no satisfactory reasons why returns should be required to be made of the accidents occurring in the coal mines of Utah and not in the metal mines of that State, nor why there should be a complete absence of public interest in this matter on the part of such important mining States as California, Nevada and the Territory of Arizona. It is reasonable to suppose that the total of 3871 fatal accidents in metal mines reported as having occurred in the different States of the United States since 1894 is, therefore, a substantial understatement of the actual facts. In all probability not much less than 5000 deaths have occurred during the period covered by the table. In the Canadian provinces during the same period of time it is estimated that there have been about 500 deaths as the result of metal-mining casualties.

The incompleteness of the table, therefore, precludes an accurate summary account of mining fatalities for recent years. Upon the estimate that about 150,000 wage earners are employed in metal mining at the present time, and that the average fatality rate throughout the United States is not less than 3 per thousand, it is reasonable to assume that the total number of fatal accidents in American metal mines at the present time is not much less than 500 per annum.

Table 2 exhibits in detail the fatality rates for the various American States and Canadian provinces for the years for which the information is available. There are some reasons to believe, however, that the number of persons employed is overestimated for some of the States by the inclusion of men at work in ore milling, smelting and refining, without a corresponding inclusion of the fatalities occurring in this group of employees.

FATALITY RATE IN THE UNITED STATES.

The table shows that between 1894 and 1908 the fatality rate in the United States has varied from 4.79 per thousand in 1895 to 2.37 per thousand in 1908.

The rate was as high as 8.28 per thousand in metal mining in Montana in 1896; 7.79 per thousand in iron mining in Dickinson county, Mich., in 1901, and 6.53 per thousand in copper mining in Houghton county, Mich., in 1895; while the rate was as low as 1.45 per thousand for the metal mines of Montana in 1908. The information at present available is not sufficient for a precise differentiation of the accident liability according to the predominating metallic products of the different States. When the returns are combined for the different mining fields and assumed to represent the predominating branch of the mining industry, it would appear that the fatality rate in gold and silver mining as determined by the combined returns for Colorado, Idaho and South Dakota was 2.75 per thousand for the period considered, while the corresponding rate for lead and zinc mining in Missouri was 3 per thousand; for copper mining in Montana, 3.53; for copper mining in Houghton county, Mich., 2.94; and for the iron mines of the same State, 4.17 per thousand. Averaging the data for all the States, and for all the years for which information is

TABLE 2. FATAL ACCIDENTS IN METALLIFEROUS MINES OF NORTH AMERICA, 1894-1908.

Ratio of Persons Killed per 1000 Employed.

	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Colorado	....	....	3.80	3.77	3.57	2.63	2.67	3.25
Michigan—Dickinson county	....	3.02	5.57	4.63	4.45	3.13	5.91	7.79
" Houghton county	2.99	6.35	2.33	2.98	2.20	2.07	2.58	2.44
" Marquette county	....	....	....	4.09	4.33	4.60	3.62	5.58
Missouri	3.36	3.70	2.65	2.51	3.81	2.46	4.49	3.73
Montana	3.81	4.68	8.28	5.29	4.33	3.98	3.36	2.90
Newfoundland—Copper	....	....	....	....	....	....	7.46	....
" Iron and pyrites	....	....	....	....	....	....	....	1.05
Nova Scotia—Gold	....	1.90	3.59	1.40	6.49	....	....	1.13
Ontario—Silver and cobalt	....	....	....	....	16.95	....	20.00	....
" Gold	....	....	10.58	2.33	3.45	18.00	13.33	....
" Iron ore	....	....	....	....	....	....	....	8.33
" Copper and nickel	....	....	2.06	....	3.14	3.58	4.85	3.94
British Columbia	....	....	....	....	3.96	4.57	3.48	3.24
United States	3.39	4.79	4.24	3.82	3.59	2.87	3.18	3.47
Canada	....	1.90	3.69	1.11	4.28	5.91	4.13	2.85
Grand total	3.39	4.73	4.22	3.74	3.63	3.04	3.26	3.40

	1902.	1903.	1904.	1905.	1906.	1907.	1908.	Total.
Colorado	2.33	2.08	2.86	3.18	2.36	2.33	1.96	2.80
Idaho	....	2.86	1.67	3.33	2.43	2.57	1.83	2.47
Michigan—Dickinson county	2.54	4.00	2.95	2.80	4.30	2.06	1.64	4.01
" Houghton county	3.11	2.42	3.14	3.78	2.67	2.79	3.37	2.94
" Marquette county	5.26	3.83	3.73	4.35	3.77	5.49	2.98	4.32
Missouri	1.23	1.37	2.20	3.93	4.38	2.79	2.88	3.00
Montana	3.41	2.75	2.83	3.27	3.47	2.71	1.45	3.53
South Dakota	3.71	2.39	....	2.26	1.88	1.71	1.69	2.25
Newfoundland—Copper	2.23	6.41	3.51	....	4.44	....	....	3.50
" Iron and pyrites	4.92	1.83	0.71	4.36	0.63	....	....	1.93
Nova Scotia—Gold	1.31	....	....	1.99	11.61	4.14	....	2.70
Ontario—Silver and cobalt	....	....	2.88	....	1.89	7.36	9.94	6.64
" Gold	....	3.87	26.09	....	....	....	8.38	6.54
" Iron ore	7.73	9.26	....	0.51	1.54	....	1.38	1.44
" Copper and nickel	4.04	1.39	0.94	5.11	1.84	2.19	8.71	3.57
British Columbia	3.25	5.45	4.04	3.77	4.27	5.07	5.68	4.23
United States	2.74	2.40	2.76	3.41	2.98	2.83	2.37	3.09
Canada	3.29	4.13	2.77	2.79	3.07	4.11	6.08	3.78
Grand total	2.79	2.52	2.76	3.35	2.99	2.85	2.69	3.14

available, the fatality rate in metal mining in the United States has been 3.09 per thousand, which compares with 3.13 per thousand for the coal mines of North America during about the corresponding period of time.

FATALITY RATE IN CANADA.

The average fatality rate for the metal mines of Canada during the same period was 3.78 per thousand. The average rate has been as high as 6.64 per thousand for the silver and cobalt mines of Ontario, and as high as 6.54 per thousand for the gold mines of that province. The average rate was lowest for the iron-ore mines of Ontario, or 1.44 per thousand, and as high as 3.57 for the copper and nickel mines of Ontario, and 3.50 per thousand for the copper mines of Newfoundland. The rate has been comparatively low for the iron and pyrites mines of Newfoundland, or 1.93 per thousand, while it has been above the average, or 4.23 per thousand, for the metal mines of British Columbia. Some of the extremely high rates for individual years, and particular mining fields, are due to the small number of men employed and do not indicate with accuracy the true occupation hazard of the industry. The information, however, apparently would seem to be sufficiently complete to warrant the conclusion that the average fatality rate in American metal mines, or 3.09 per thousand, is less by as much as 0.69 per thousand, than the corresponding rate for the metal mines of Canada, which is conservatively calculated at 3.78 per thousand.

METAL MINES VS. COAL MINE FATALITIES.

It is made apparent by the preceding analysis that the fatal-accident liability in metal mining is certainly not much less than the corresponding accident liability in coal mining. It is quite possible that if the subject were thoroughly inquired into and if all doubtful data were eliminated, it would be shown that the fatal-accident liability is really greater in metal mining than the corresponding liability in coal mining. In this connection it has been pointed out by E. T. Corkill*, Ontario Inspector of Mines, that:

"In metalliferous mining an accident seldom occurs in which a considerable number of men are killed, the fatalities usually being one or two at a time, though in the course of a year they may amount to a large total. Public opinion is, therefore, not aroused; the management of the mine is not so much impressed with the importance of careful supervision; the miners are awakened for a few days, and then forget, and the same conditions prevail as before. It is a common belief among most metal miners that the fatalities in coal mines far exceed those in metalliferous mines. This is a great mistake, and, while it is not proposed to argue that metal mining is as hazardous a calling as coal mining, still the writer desires to impress upon all metal miners that only care and close supervision of their work will lessen the number of accidents and place metalliferous mining on the list of the less hazardous occupations."

*Eighteenth Annual Report of the Bureau of Mines of Ontario.

COMPARISONS OF INTERNATIONAL STATISTICS.

International comparisons have their inherent limitations, but they serve the useful purpose of bringing into contrast at least the apparent differences in conditions which may demand further inquiry and qualified research. Where the liability to error is as serious as in the case of mining-accident statistics, due to the absence of information, or varying methods of reporting casualties according to the degree of seriousness, an international comparison may be seriously misleading. But, subject to this caution, the following rates are included for the principal mining countries of the world. The rates, with few exceptions, are for the period 1899-1906 and they have been derived from the annual reports of the Chief Mine Inspectors of the United Kingdom.

Algeria, chiefly iron mines, average rate 1.38 per thousand.

Austria-Hungary, iron mines, 1.48; other metal mines 3.11 per thousand.

Bohemia, iron mines, 1.67; other metal mines 0.81 per thousand.

Bosnia and Herzegovina, iron mines, 1.84; other metal mines, 0.82 per thousand.

Belgium, metal mines, 0.75 per thousand.

France, metal mines, 2.02 (for men working underground the rate was 2.49 and for men working overground, 0.92 per thousand).

Germany, ore mines and smelting works, 1.07; Prussia considered separately, 1.08, and Saxony, 0.81 per thousand.

Italy, metal mines, including sulphur, 1.73. In Italy the fatal-accident liability in sulphur mines alone during the 10-year period ending with 1899 was 2.84 per thousand.

Japan, metal mine (1903-1906), 1.50 per thousand.

Portugal, metal mines, 0.95; but for underground workmen alone the rate was 2.15 per thousand.

Spain, chiefly metal mines, but including some coal mines, 2.65 per thousand.

Russia, gold mines (1901-1903), 0.55 per thousand.

United Kingdom, metalliferous mines, 1.14; but underground workmen alone, 1.67, and workmen overground 0.39 per thousand.

New South Wales, alluvial gold mines, 0.54; gold quartz mines, 0.87; silver and lead mines, 2.49; copper mines, 1.22; tin mines, 0.83 per thousand. (In the Broken Hill district the percentage of cases of lead poisoning averaged during the decade 1897-1906, 0.32, but the ratio was as high as 1.12 per cent in 1902).

Tasmania, metal mines (1901-1906), 1.19 per thousand.

Queensland, gold mines, 1.70 per thousand.

Victoria, gold mines, 1.08 per thousand.

Western Australia, gold mines, 2.15 per thousand.

British Guiana, gold mines, 0.28; alluvial placer gold mines in 1895, 8 per thousand.

Kimberley, diamond mines (white miners only), 1.36; underground workmen considered alone, 5.28; and workmen above ground, 0.47; colored miners, only, 3.60; workmen underground, only, 7.27, and above ground, 1.71 per thousand.

South African Republic (1895-1898), white miners, 5.41; colored miners, 4.44; total, 4.56 per thousand.

Ceylon, metalliferous and plumbago miners, mostly the latter, 0.37; underground, 1.01; overground, 0.07 per thousand.

Gold Coast, gold mines (1898, 1903-1906), 2.41; workmen underground, 6.03; overground, 0.54 per thousand.

India, gold mines, 2.24; underground, 3.23; overground, 0.70 per thousand.

India, mica mines, 0.75; underground, 1.18; overground, 0.13 per thousand.

India, manganese (1901-1906), 0.37 per thousand.

India-Mysore, gold mines, 2.51 per thousand.

New Zealand, alluvial gold mines, 1.53; quartz gold mines, 1.32 per thousand.

Transvaal (1902-1906), gold mines, white labor, 4.15; colored native labor, 4.74; Chinese labor, 6.50 per thousand.

It requires no further discussion to emphasize the practical importance of a qualified inquiry into the whole subject of fatal accidents in metal mining corresponding to the amount of public attention which is being given to the occurrence of fatalities in coal-mining operations. The same neglect of metalliferous mines is characteristic of English mining legislation, which has never been as effective in the case of metal mines as in that of coal mines. There can be no question of doubt but that a qualified inquiry would bring to light many facts of great practical importance, and there can be no excuse for the derelict mining States of the far West, which at present give no publicity whatever to the facts of accident occurrence in the metal mines of their respective States.

FREDERICK L. HOFFMAN.

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